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What Next in Medicine?

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I make no apologies for addressing you on a subject vital to organized medicine. The eyes of the country are upon the medical profession. The mass of underprivileged and the rank and file of low income brackets are looking to the doctor for a solution of this most perplexing problem. And a solution there must be—and further, a solution there will be whether right or wrong, or whether we like it or not.

To understand the present medical economic chaos one must consider the factors which led up to the existing situation. Let us go back in more or less a brief manner to the formation of our republic. Thirteen original colonies scattered along the eastern seaboard joined a confederacy of states. They drew up a constitution and attempted to live by it.

At first the wealth of the country was so divided that 80% of the people owned property that was the means of a livelihood. The other 20% worked for the 80%. The property owners were made up of farmers, blacksmiths, silversmiths, cobblers, weavers and what not. A population which, as I have contended, owned property which gave them the three essentials of life—food, clothing and shelter. They were a self-sustaining people. The other 20% learned the craft or trade and later set up their own establishment. Everybody was happy.

This worked well enough through the early years of the democracy, and it was not until after the Civil War that things changed materially. There had been a gradual shift of the percentages but it remained for the industrial age to reverse the situation. From 1870 on industry grew, and with the growth of industry the amassing of large fortunes followed. To cut short the story, today we have 80% of the population without property (property capable of producing a living for the individual or group), and we find this same 80% working for salaries or wages for the other 20%, who own all the means of production.

The economic security of this larger group is in the lap of the gods. There is a small percentage of salaried workers who are in the higher brackets and who can budget for sickness, but the vast majority are unable to pay for any type of medical care or hospitalization. Something has to be done about it.

Doctors are, after all, human—and human beings, let us admit, are queer animals. They resemble the proverbial ostrich with his head in the sand. Nothing can happen to the ostrich as long as his head is covered. On the same premise nothing can happen to the doctor, he reasons, as long as he can keep his eyes closed to the existing situation. He lulls himself to sleep with thoughts of work well done. He pats himself on the back for having done through the year charity work equal to half his income, then curses the indigent for not being able to pay. This same doctor is, without doubt, in the high income class, and whatever charity work he has done has been well paid for. If I collect $20,000 a year it should give me no concern who pays it. I get it, and that should be sufficient remuneration for my services. Whether one patient pays it or all pay it is beside the point. I am well recompensed for my year's work.

But let us analyze the so-called charity work whereby we, as doctors, maintain the indigent is given proper care and attention. I am called to see a sick man in Barelas, San Jose or Martineztown—slums of the town of Albuquerque. I find him in utter poverty. I give my time and what ability I possess in a careful examination of this patient. I realize if he is to recover, he must be removed from his evironment to a sanatorium. He must be given hospitalization for surgery of the chest. He can't afford one cent for anything. What is to be done? Nothing. Under the present set up in New Mexico a poor man is without hope. The small State sanatorium, which has only recently been established, is full to overflowing, and there is no general hospital for the poor—only for those who can pay. The state appropriates an insignificant sum for two or three Catholic hospitals; this entire appropriation would not hospitalize properly two dozen surgical cases.

So, I ask you, what has my charity accomplished? Nothing—absolutely nothing. I may as well never have seen the patient as far as being able to give him proper and adequate medical care.

Let us then remove our head from the sand. Let us open our eyes to facts that are staring us in the face. Let us cast aside the traditional ideas handed down by the "Horse and Buggy Doctor" and do something about it. The social agencies, as you too

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well know, have been at it a long time. The Milbank Fund, the Committee on the High Cost of Medical Care, the American Foundation through its two volumes on American Medicine, and various other agencies have been telling the public and the American doctor that a solution must be found.

The American public has listened—theirs is the ox that is being gored. The American doctor has turned a deaf ear. He thinks—no, rather he assumes, he doesnt think—that his particular ox cant be gored. He has run the practice of medicine all of his life, and since the life and death of Hippocrates he still runs it, but he fails to realize that at last he has come to the cross-roads of doctor-patient relationship, and that the best he can hope for is to be the directing force in the medicine of the future.

Once organized medicine lets this statement of fact wear a path in its gray matter by continual reiteration, something may yet be done to devise a law that works for the benefit of both doctor and patient.

Contrary to the opinion of the Roosevelt haters, contrary to the opinion of the editorial policy of the American Medical Association Journal, the British have a fairly workable law. And be it said that the British Medical Association saw the hand writing on the wall twenty-five years ago and played the part of the good politician by offering its services to the government, along with the health agencies of England, to the end that the doctor still has something to say about the practice of medicine in that country.

The law is not perfect, but the British Medical Association is now trying to get through the government amendments that will raise the compulsory insurance from 250 pounds per year bracket to the 400 pound bracket income; also to not only include the worker but the entire family under the insurance act. Further, to provide consultation with specialists at all times. The English law has been changed a few times in the past, but always tending to a betterment of medical economic problems. The point American medicine should consider is that the English have had twenty-five years' experience and that we can well afford to profit by this experience.

Do not be misled by the propaganda that nobody likes it—doctor or patient. They do. In fact, if my contact this summer while in England proves anything, it proves that they more than like it; they are actually devoted to it.

You don't have to be a Panel doctor if you still want to practice private medicine. We haven't pauperized the Harley Street practitioner' He still flourishes in all his ancient glory. And furthermore, it has brought the pauperized doctor out of the gutter and made a prosperous man of him, so much so that 80% of the profession belong to the panel system, while the other 20% bask in the glory of a private practice.

The conservatives among us speak of a revolt in the ranks of organized medicine. Such is not the case. The California and Michigan State Medical Societies believe something should be done about the low income groups. The New York State Medical Society made excellent recommendations to the House of Delegates at the Atlantic City meeting in 1937. Out of the A. M. A. opposition to anything constructive was born the Committee of 430 Physicians. These efforts were not in the nature of revolt, but the free expression of opinion of fair-minded medical men in an endeavor to save the face of medicine from the folly of traditional thinking. At long last the American Medical Association felt that something had to be done to stem the tide of criticism, and at a special meeting of the House of Delegates held in Chicago during September of this year the report of the Committee on a National Health Program was adopted. This is a step forward, and it is to be hoped one not too long delayed to bear fruit before the next Congress passes a National Health Law.

In a study of the Committee's recommendations, one finds that the fly in the ointment comes under the section "Medical Care for the Medically Needy." Here the A. M. A. advocates local community care with the possible help of the State in extreme cases. The same inadequate County care that the low income brackets have received from time immemorial would be the olive branch offered for adequate medical care and hospitalization.

The Committee, further, recommends Hospital or Group Insurance which, as we all know, takes care of hospitalization, but does not provide for payment of medical services. The Committee goes on record as not willing to foster any system of compulsory health insurance. This, in my opinion, is the only satisfactory way the low income group can be given adequate care both from the patient's and the doctor's standpoint.

When one considers the average income of the population of the United States as reported by the National Resources Committee covering the fiscal years 1935 and 1936, one is aghast. One-third of the population has less than $780 per year, one-half less than $1070, two-thirds less than $1459, and nine-tenths less than $2500. What possible chance, I ask you, has nine-tenths of the population to finance illness? Under a compulsory insurance plan run by the federal Government, in which the employer pays his part, the worker his and the Government its bit, proper care can be given. The insurance should cover all incomes from $2500 per year down. It should insure the family as well as the worker; it should provide hospital care and free choice of doctor; it should provide for consultation with all specialists; it should provide laboratory facilities when needed; in fact it should cover all necessary measures in the proper care of the sick.

The operation of the act should be left to the federal Government, and the act should be made flexible to make it possible to meet the existing differences between sections such as a highly industrial East and an equally highly agricultural Middlewest. There should be no quarrel with the Government or social agencies as to the personnel administering the act being well represented by

the medical profession. And if organized medicine attacks the problem in the right way, representation will be forthcoming. But more ground will have to be given than the A. M. A. proposes when it comes to the care of low income brackets.

We must not forget that today 63% of the hospital beds of the country are Government owned. By that I mean Veteran Bureau Hospitals, State, County and Municipal Tuberculosis Sanatoriums, State Insane Hospitals and County General Hospitals. This, together with free dispensaries, free clinics, plus child and maternal welfare agencies, shows one just how far the Government already is in the practice of medicine.

Add to this situation the plight of the low income medical group. Before 1929 one-third of the doctors of the country had incomes of less than $3000 and one-half less than $3800. There is every reason to believe these levels are much less today. These men would welcome any service that would augment their income, and care little who paid for such services.

With facts such as these staring us boldly in the face, it does not take more than average intelligence to realize that a solution must be sought—a solution that takes care of both doctor and patient in the low income bracket. An attempt at that solution will be made, I predict, during the next session of Congress, and it is up to organized medicine to offer constructive council that a sane and just law may be written.

If we approach the round table discussions with this attitude, something workable will come to doctor and patient alike, but if we enter in a belligerent manner the medical profession may find itself regimented and working for the State. It is up to us.

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Atherosclerosis, Angina and Allergy

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WILLIAM Heberden, in 1768, was the first to accurately describe angina pectoris in all its features. Jenner first learned of the disease from him, and while performing an autopsy on a case in making a section at the base of the heart, his knife struck something of stony hardness. so much so that he looked to the ceiling to see if plaster had fallen, but he found that it was the coronary artery turned to bone. He believed that this had caused the patient's angina and that it would be found in other cases, which proved true.

At about this time, John Hunter began to suffer from angina and, of course, Jenner was sure of the cause. But not wishing to alarm his friend, he kept secret his discovery for the 20 years of Hunter's frequent bouts of angina. At post mortem, Jenner's theory was conclusively confirmed, the coronaries were turned to bone.

Since we know that angina pectoris almost never occurs in the absence of coronary atherosclerosis, we may be quite sure that Hunter's case was no exception to the rule. However, it would take a long stretch of the imagination to believe that chronic deficient coronary flow, of which we hear so much, was the sole cause of his attacks for 20 years. During all this time, Hunter worked early and late. He was a spare man and forsook wine at meals after his angina began. Evidently, he suspected his eating habits as the cause of his angina, and tried to correct them.

It was asserted some 10 years ago, that "the man with true Heberden's angina, is doomed!"[1] That goes beyond the evidence. Heberden himself observed that some lived 6, 8, 9 and 14 years with their angina. I have patients living and very active 8, 10, 14 and 16 years after an attack of acute coronary obstruction.

ATHEROSCLEROSIS

Atherosclerosis is in general a slow development. That is why angina may continue so long before acute coronary obstruction occurs. In the coronaries, sclerosis begins first near the aorta because here the pressure and strain are greatest. As the smaller branches are reached, the current slows down and pressure lessens. So naturally the atheromatous changes only reach the smaller branches after many years. The arterioles nearly always escape. Owing to the peculiar mechanical strain to which the coronary arteries are subject they are affected with atherosclerosis 3 or 4 times as often as any other artery of similar size in the body.

At first these atheromatous deposits are capable of being absorbed, that is they are reversible.[2] Since the process travels very slowly outward, some reabsorption may occur in advanced cases in the more recent lesions. In the German army, pathologists observed during the war when fats were scarce, that atherosclerosis was much less marked. In one of my own cases who had been on a strict low fat, low protein and low calory diet for a long time, it was noted that while the coronaries were badly sclerosed there was very little atheromatous deposit. Nautrally firosis and calcification are permanent, but it is always worth while to limit the intake of fats and choesterol in the hope that some parts of the vessels will be opened up a little at least.

Sudden coronary closure is an event that cannot well be anticipated. Capillary vasculization of the intima has been demonstrated in the region of coronary atheromata, with subintimal hemorrhage causing closure and infarction.[3] Such hemorrhage

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might be favored by allergic reactions causing increased capillary permiability.

I think that the old idea that these atheromatous deposits in the arteries are just an aging process has about disappeared. Such deposits of cholesterol have been found in babies and small children. In the new born the high cholesterol content of the mother's milk may be the cause. They disappear later. Experimental atherosclerosis in rabbits, as demonstrated by Anitschkow's feeding cholesterol, has proved that the atheromatous plaques so produced disappear quite rapidly and completely when such feedings are suspended. Too much fat always means too much cholesterol.

Timothy Leary[4] in Boston, confirmed Anitschkow's work quite recently. He says that cholesterol is just as much the cause of human atherosclerosis as is the pneumococcus the cause of pneumonia. Atherosclerosis results when the intake of fats and cholesterol is beyond the capacity of the body to metabolize it. Such capacity is impaired in diabetes.

Shields Warren,[5] of the Joslin Clinic has said: "I have yet to see an autopsy in a diabetic or read the autopsy protocol of a diabetic whose disease has lasted five years, free from atherosclerosis regardless of age." This was under the pre-insulin high fat and high protein treatment—a combination especially favoring atherosclerosis. Recent report from the Joslin Clinic indicate that under a diet of lower fat content and more carbohydrates in the treatment of diabetes, evidence of calcification in the arteries in the legs of children is lacking. Formerly it was the rule. This indicated that in diabetes at least, atherosclerosis can be prevented by diet. Perhaps in any case of beginning atherosclerosis the process can be checked by proper dietary precautions.

EVIDENCE FOR ALLERGIC ETIOLOGY

There is some evidence of the possibility of foreign serum reactions hastening atherosclerosis.[6] Rabbits made anaphylactic (allergic) to pig serum developed atherosclerosis in 2 or 3 weeks. Controls did not show such changes until from 2 to 4 months and many times larger doses of cholesterol were required. The lesions were found in the aorta. In one case there was coronary occlusion. The author believes that early atherosclerosis particularly in young subjects and especially in the coronary arteries, probably is the result of previous toxic inflammatory damage to the vessel walls by allergic reactions.

Eugene Clark[7] reports post mortem findings in a case of serum disease. There was found proliferation of histiocytes in the intima in the aorta, pulmonary and coronary arteries. The lesions were so like those present in animals with anaphylaxis induced by foreign serum that he suspected them to be of hyperergic (allergic) nature. Such reactions may open the way for cholesterol infiltration and furnish the missing link in Aschoff's theory of atherosclerosis.

At the Hamburger Clinic in Chicago, Katz[8] and his associates experimented with the injection of serum of beef blood into the veins of dogs. It was found that death was due to violent spasm of the coronary arteries so much so that no blood could pass. In dogs desensitized after the method used in giving serums in disease, no coronary spasm occurred and the dogs survived after use of very large injections of the beef serum. They think that "The possibility of foreign blood coronary spasm might be in the nature of a specific foreign protein affair and raises the question whether or not similar types of reaction may not follow in susceptible individuals when foreign protein enters the blood stream. We cannot resist the temptation (they say) to speculate that this may on occasion lead to severe coronary vaso-constriction and help to explain some cases of acute coronary insufficiency and angina pectoris, especially if the coronary vessels are already the seat of narrowing, especially in the larger channels." This, as they say, may be conjectural only, but it seems to connect up very well with my clinical experience[9] in considering some cases of angina pectoris as due to food allergy. Good results have occurred too frequently for there to be no connection at any time between allergy and angina pectoris. With the same care, the results compare favorably with the results in treating asthma along the lines of food allergy. Clinical experience often points the way long before scientific demonstration brings proof.

Already in 1935, Katz[10] had "concluded that ischaemia of the myocardium is at most only one of many mechanisms operating on the nerve endings and nerve fibers in the coronary arteries which may give rise to anginal attacks." There has been a tendency to minimize spasm of the coronaries in angina and discount such spasm as an important factor in regulating coronary flow. In dogs at least as demonstrated by Katz and associates, it may play the major role. The heavy muscular and excessive nerve supply to the coronaries would indicate that they must function actively in adjust-the coronary flow. Leary[11] has reported two cases of angina pectoris in young men. They both died suddenly in an attack; at post mortem, there was found hypertrophy of the media of the coronary arteries. In one, there was longitudinal rugation of the intima. There was no thrombosis. Leary thinks that coronary spasm was the sole cause of death.

Banting[12] and his associates have produced in dogs by injections of acetylcholine, (the chemical mediator of the vagus system[12]) wide-spread vascular lesions, especially in the coronaries. There was hypertrophy of the media and occasionally coronary thrombosis. These results enable one to see that with sensitized coronaries even the normal production of acetylcholine at vagus nerve terminals in the muscle cells might set up coronary spasm and angina.

Organic disease of the coronaries is not in itself

alone sufficient to cause coronary spasm and angina pectoris. In Dr. W. W. Waite's post mortem we have had six or seven cases where both coronaries were practically closed. They were all young men, mostly syphilitic, they all worked at hard labor up to the day of death, and we could elicit no history of anginal attacks. Dr. Paul White reports the same experience.

CORONARY SCLEROSIS

Coronary sclerosis of quite marked degree is found in from 20 to 30 per cent of all men beyond 40 years of age. Anginal attacks are rare in comparison. Many die of acute coronary obstruction with no history of angina pectoris. Of 87 of my cases of cardiac infarct, only 19 previously had marked anginal attacks. White[14] states it so well that I quote: "A very sensitive person, especially one with capacity for vascular spasm, may suffer from angina pectoris with relatively little coronary disease behind it, or indeed perhaps in rare cases none at all, while an insensitive person may have an appalling amount of disease or even chronic occlusion of both coronary arteries with no pain whatsoever." This hypersensitive group will often be found to be Allergic, according to my experience. However, there may be other reasons for the hypersensitivity of the coronary arteries. Angina and coronary sclerosis go together. The presence of angina is a signal of danger that if heeded and followed by correction, especially of bad eating habits, may actually prolong life and thus be advantageous.

ROLE OF ALLERGY

I wish to offer further evidence that allergy may effect the coronary arteries. There is no reason why the coronaries should be exempt. In the first place, the fundamental way in which allergy manifests itself is by spasm of smooth muscle especially in the smaller arteries. Secondly, there is dilatation of capillaries and exudation. The reaction is most violent in those arteries with the most smooth muscle in their walls. This has been demonstrated in animals.

Anaphylactic death in the guinea pig is from bronchial spasm because the guinea pig's bronchials have a heavy smooth musculature. In the rabbit, anaphylaxis acts on the arterial supply of the bronchi because in these animals the preponderance of smooth muscle is in this location. Bronchial spasm follows secondarily. In the dog, anaphylactic death is due to vessel spasm in the liver and gastro-intestinal area for similar reasons. Now in man, the coronary arteries have a heavier coat of unstriped muscle than any other artery of similar size in the body.[15] So if the law holds, this should be a favorable site for allergic reaction. I think this may be one reason why the coronary arteries are sclerotic so much oftener than other arteries of their size in other situations.

Periarteritis modosa shows that allergy may manifest itself in the coronary arteries. Cohen, Kline and Young[16] set down this ailment as a clinical manifestation of allergy. In one of their cases post mortem showed most severe eosinophilic infiltration in the arteries of voluntary muscles, liver, gallbladder and heart.

OTHER FACTORS IN CORONARY DISEASE

In the search for the causes of coronary sclerosis and angina pectoris, suspicion has fallen upon many things, especially the hectic life of modern civilization. However, very perfect examples of arteriosclerosis have been found frequently in ancient Egyptian mummies, long before man took to the air or fortunes vanished in the stock market or high powered executives were credited with overwork. Certain statistics do not support some of these ideas. Foremen and skilled workers, according to Levy and Bruenn, come first, the strenuous professions second in early deaths from coronary disease.[17] Occupation is not the leading factor. I think we must look more to the cellular environment and not so much to the outside. Generally the chief cause of angina pectoris and coronary sclerosis can be traced to what has gone down the gullet. Other factors are of secondary importance.

The statistics of the Union Central Life Insurance Company[18] on 200,000 insured men who died of angina pectoris and arterial disease are of interest in this connection. "The death rate from angina pectoris in overweight persons was over twice that among persons of normal weight, and two and one-half times that among underweights. Among overweights, there was a moderate tendency for the mortality to increase with the degree of overweight. Disease of the arteries caused a mortality 75% higher among the overweight than in normal weights and over twice as high as in underweight men."

A recent study by Glendy, White and Levine[19] of 100 young persons with coronary disease and 300 healthy persons over 80 years of age showed that 83 per cent of the old folks were of average build or had been thin and lean for the most of their lives. They claimed to have eaten more moderately than the younger group and perhaps more sparingly of such cholesterol containing foods as milk and eggs. Nearly 70 per cent of the younger group were of robust build or distinctly fat.

Regardless of other factors, obesity generally comes from eating too much and especially too much fat along with which always goes cholesterol, the one important cause of atherosclerosis.

CONCLUSIONS

1. Angina pectoris is not likely to cause death in the early stages of coronary sclerosis. If the sclerosis progresses very slowly, acute coronary closure may be delayed for decades.

2. Narrowing of the coronary arteries alone or even complete closure may not give rise to anginal attacks. Sensitization of the coronaries and coronary spasm must also be present to cause angina. Allergy is the common cause of sensitization.

3. Allergic reactions in the coronaries by damaging the endothelial lining favor cholesterol infil-

tration into the intima and subsequent atherosclerosis.

4. The heavy smooth muscle coat in the coronary arteries suggests them as a favorable site for allergic reactions.

5. Statistical evidence is offered, showing that obesity, which generally means excessive intake of fats and cholesterol, causes a tremendous increase in deaths from arteriosclerosis and angina pectoris.

6. Coronary sclerosis, angina pectoris and acute coronary obstruction may be stayed in their progress and possibly largely prevented by proper dietary measures.

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The Endocrinology of Prostatic Hypertrophy

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The past decade has presented us with an increasing number of addtiions to our armamentarium for the treatment of prostatic obstruction. Most of these additions have been of a technical or surgical nature. Within the last few years, new ideas have arisen regarding the etiology of prostatic hypertrophy. These ideas have brought visions of the possibility of treatment of this condition through medical means.

PATHOGENESIS OF PROSTATIC HYPERTROPHY

The etiology of vesical neck obstruction has always been the subject of much thought and discussion. The very number of scientific guesses as to the cause of this phenomenon indicates a lack of specific knowledge. It is known that obstructive uropathy at the bladder neck in the adult is due to a number of distinctly different pathologic processes. These are:

(1) CONTRACTURE OF THE BLADDER NECK

This condition results from a replacement of normal prostatic tissue by scar. It is the end stage of chronic inflammation. In a gland thus afflicted, there has occurred a sequence of acute inflammations, healings, recurrences of inflammations, followed by healings, and so on, until the glandular structure is destroyed and is replaced by scar. This is the "prostatisme sans prostate" of the French. In it, there is an increase of stroma at the expense of the epithelial structures. As a result the channel is constricted by a ring of scar tissue. The prostate is small.

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(2) BENIGN ADENOMA OF THE PROSTATE

In this pathologic condition, a true hyperplasia is present, which many workers believe begins in the peri-urethral glands or the so-called accessory prostatic glands. There may also be a proliferation of immature fibromyomatous spindle cells in the stroma of tissue surrounding the prostatic urethra. Enlargement of the glandular structures ensues when these spindle cells surround the glandular elements. The glandular elements continue to grow within the fibromyomatous tissue envelopes, developing into spheroids or small globular epithelial structures. It is this spheroid type of growth which is pathognomic of prostatic hyperplasia. According to the work of Deming in 1935 in at least half of the cases of benign adenoma of the prostate the anatomic origin of the adenomatous nodule is from the submucosal glands. In his work, he showed that castration had no effect on these glands in rats. In a close study of their growth he came to the conclusion that they were not under the influence of the endocrine system.

(3) PROSTATIC HYPERTROPHY

This condition is due to a uniform hypertrophy of all the elements of the prostate gland, producing simply an enlarged gland.

(4) CARCINOMA OF THE PROSTATE

(a) Carcinoma frequently originates in the capsule of the prostate. There is a subsequent invasion of the glandular substance.

(b) Less frequently the acini within the prostate may degenerate into a carcinomatous process which invades the gland in every direction from the focal point.

It is note-worthy that the only type of prostatic obstruction which experimental workers have been able to reproduce in animals is that given under Type 3 above, namely a uniform hypertrophy of all the elements of the prostate gland. In the cases where this condition has been produced, the seminal vesicles also invariably hypertrophy along with the hypertrophy of the prostatic tissue itself. Many investigators have been able to report the experimental production of such prostatic hypertrophy in many of the lower animals. This hypertrophy has been shown to be a response to many different hormone substances.

ENDOCRINE RELATIONSHIPS TO PROSTATIC HYPERTROPHY

The invariable occurrence of atrophy of the prostate and seminal vesicles after experimental ablation of the testicles in the lower animals, called the attention of many workers to the possibility of a relationship between the size of the prostate and the secretion of the testes. Investigations into this phase of the activity of the testicles were not fruitful in the early years of research because of the small amount of the active principle secreted by the testes. These workers expected the concentration of hormone in the testes to be of the same order of magnitude as that obtained from extracts of adrenals or thyroid. The early testicular extracts were crude and the dosage minute. An idea of the difficulties involved may be obtained from the fact that one ton of bull testis has been found to contain only 150-270 mgm. of pure hormone.

Real progress in the concentration of the testis hormone has come since McGee first concentrated an active lipoid soluble male sex hormone from bull's testes in 1927. In 1931, Butenandt obtained 15 mgm. of crystalline male hormone from 24,000 liters of human urine. Butenandt's next step was to call attention to the probable relationship of this substance to cholesterol. He named his new substance ANDROSTERONE because it is a sterone. Later he isolated a similar compound having less hydrogen which he called DEHYDROANDROSTERONE. Later, Ruzicka was able to prepare androsterone from cholesterol, thus definitely establishing the relationship of these compounds to cholesterol. In 1935, Laqueur and his co-workers prepared another male hormone from fresh testicular tissue. Laqueur called this substance TESTOSTERONE. It was found to be many times more potent than anorosterone. It has since been synthesized from cholesterol.

More investigators agree that the interstitial cells of Lydig elaborate the hormone of the testes. This is not known with certainty.

At the present time, the general opinion is that testosterone is the true male hormone and androsterone and dehydroandrosterone are to be looked upon as probable metabolic derivatives of testosterone which have similar but less active physiologic properties. All of these substances in adequate amounts maintain or restore the whole male fecundatory mechanism. McCullagh and associates in 1934 reported that following hypophysectomy complete atrophy of the primary and secondary sex glands occurs. They also found that the daily injection of nine bird units of androsterone into the hypophysectomized rats maintained the testes, seminal vesicles and prostate of these animals in an apparently normal state. These same investigators also reported that they could control the hypertrophy of the adrenals whch follows castration by means of the administration of androsterone. In 1935, Korenchevsky was able to show that androsterone prevented all castration changes except pituitary hypertrophy. The presence of hypertrophy in the pituitary was detected through the demonstration of an increased production of gonadotropic hormone measured quantitatively in the urine. The fact that changes in the pituitary occurred after castration in spite of the administration of large dosages of the only known testicular hormone, suggested the need for an additional and so far unknown male hormone. In 1936, Nelson and Gallagher showed that even the changes in the pituitary could be prevented by giving the male hormone in more massive dises than that used by previous workers. In large doses, the male hormone was effective in preventing changes in the pituitary in castrates of both sexes. If this male hormone is contaminated with traces of estrogenic material, less of it is required for restoration to the normal of the pituitary in the castrated female. They found that the same beneficial effect on the pituitary was obtained by adding small amounts of crystalline theelin to the male hormone concentrate. These facts suggested to Nelson and Gallagher the thought that there was a biologic reason for the presence of estrogenic material in the male. They found that small amounts of this estrogenic material were so effective in aiding the male hormone to prevent the so-called castration changes in the pituitary gland that it was not necessary to hypothecate the presence of an additional male hormone as a necessary factor in pituitary control. Their conclusion was that the combined action of androgenic and estrogenic substances is sufficient to effect natural control of the pituitary. Thus in the hands of various workers, all of the effects of ablation of the testes, namely, alterations in the secondary sexual characteristics of the animals, hypertrophy of the adrenals, hypertrophy of the pituitary and the formation of peculiar vacuolated cells in the pituitary gland, could be completely controlled by the administration either of large amounts of the male hormone or of a combination of relatively small amounts of the male hormone and extremely small amounts of estrogen. Of greatest importance to us in the subject under consideration was the fact that the alteration in the size of the prostate incident upon experimental ablation of the testes, could be prevented by the administration of male hormones or of male hormones and female hormones in combination.

The possibility of the existence of a second tes-

ticular hormone was again brought into prominence by the work of a group of investigators from the University of Oregon. These men, Meyers, Vidgoff and Hunter, fed dessicated beef testes to rats. They expected the feeding of this substance to produce hypertrophy of the rat prostate and seminal vesicles, expecting this change because they knew that the injection of the male hormone would prevent prostatic atrophy in animals which had been castrated, reasoning that the giving of more of this material might bring about an increase in the size of the prostate and seminal vesicles. To their surprise, they found that prostatic atrophy occurred instead of hypertrophy. The amount of material fed was not great, it consisted of 0.2 gram amounts, five times a week. The results were defnite in that autopsy showed the average weight of the prostatic glands of controls to be 0.535 grams against a weight of 0.162 grams for the experimental animals which had been fed bull testes. A possible explanation of this phenomenon is that the fatty extract of the testicles containing the sterol, active as testicular hormone, is not absorbable through the gut wall in any sufficient quantity to exert an influence as a hormone. On the other hand, unknown water soluble substances in the dessicated bull testicles were thought to have been absorbed, exerting an inhibitory effect upon the pituitary gland and resulting in prostatic atrophy. The work of Vidgoff, Meyers and Hunter has never been repeated. It is important enough to call for further experimental evidence of the occurrence of these phenomena.

Some light is thrown on testicular and pituitary hormones in their effect upon the size of the prostate by the work of Martins and Rocha in Rio de Janeiro, Brazil, who experimented with parabiotic animals. These animals are surgically united so that their abdominal cavities are continuous. In them a flow of peritoneal fluid occurs from one animal to another, permitting the transference of water soluble substances. The area of attachment of skin to skin is limited enough to prevent a very great exchange of blood between the two animals. Therefore, water soluble substances are readily transferred but lipoids are not. Among the many experiments performed by these workers, a few interest us directly at this moment. They found that if one of two males thus united is castrated, there occurs a definite hypertrophy of the prostate, seminal vesicles and testicles of the normal twin. They conclude that the pituitary of the castrate becomes hyperactive because the excised gonads no longer exercise a control over it. The water soluble gonadotropic hormones of the anterior pituitary of the castrate partner then pass to the parabiotic twin stimulating its testes and accessory sex glands. Of particular interest to us is the fact that they were able to prevent these stimulating effects by intensive treatment of the castrated male with water soluble testicular extracts. Alterations in the pituitary were also prevented by the aquaeous extracts. This is important because the known male hormone is fat soluble.

About a generation ago, castration was frequently performed upon sufferers from benign adenoma of the prostate in the hope of bringing about a recession in symptoms and a possible atrophy of the growing prostate gland. This action grew out of the hope that the results of castration upon the pathology of human prostatic hypertrophy might be comparable to those found in the normal physiology of experimental animals. The method was found not to be of great value, and indeed cases of castrates have been reported in whom prostatic hypertrophy developed in spite of the absence of testes. One such case is reported by Deming in 1935:

"A male, aged 74, was admitted to the New Haven Hospital on March 3, 1933. For two and one-half years he had experienced increasing urinary difficulty. There was urgency, great hesitancy, dribbling, burning and smarting on urination. At 18 and 21 years of age, he had suffered from accidents in which at each time he was struck across the testicles with a crowbar. After the second injury, he was told by his physician that he could never become a father. He married but his wife never became pregnant. After the age of 25, erections ceased. On admission, the rectal and cystoscopic examinations disclosed a large benign prostatic hypertrophy with a residual urine of 300 c.c. The testes were atrophic measuring 1 cm. in length. Thus this man was castrated in the early twenties and yet developed prostatic hypertrophy at the age of 74."

In a previous publication, the same observer reported a case of prostatic hypertrophy which he treated by castration. After three months, there was no improvement and complete obstruction of urination persisted. Deming, in his work, also presented experimental evidence to show that castration has no effect upon the submucosal glands of the prostatic urethra. This group of glands causes 50% of the cases of prostatic hypertrophy. In his experiments, castration of 25 rats was carried out. One group was castrated before puberty and the other after puberty. The development and progress of the submucosal glands was unaffected in each group. It is his contention that the submucosal glands are not under the control of the endocrine system.

The germinal epithelium of the testes, according to a hypothesis of Lower and his associates, elaborates an unknown water soluble hormone which exerts indirectly an inhibitory influence upon the prostate. This hypothetical principle they have named "Inhibin" on the assumption that it acts upon the pituitary to restrain the stimulating effect of that gland upon the interstitial cells of the testes. After middleage, it is their belief, regressive changes in the testes result in decreased production of this hypothetical pituitary inhibiting principle. The result is overstimulation of the interstitial cells of the testes by the gonadotropic hormone of the pituitary. They believe that the basophile cells of the pituitary are the probable source of the gonad stimulating hormones, holding

to this belief because after castration these basophile elements of the pituitary are increased in number and size, producing the so-called "castration cells", or signet cells in the pituitary gland. Martinis and Rocha in 1930 showed by grafting ovaries into castrated females and testes into castrated males that the normal pituitary cytology is restored. However, if testicular grafts are made in the females and ovarian grafts in the males, the castration cells remain, showing a definite sex specificity.

The female hormone, estrin, has long been known to be present in male urine. According to several English and European investigators, notably Zuckerman, Parkes, DeJongh and Laqueur, prostatic hypertrophy is due to a change in the estrogenic-androgenic ratio. It was shown by Zuckerman and Parkes that injections of estrin into monkeys causes prostatic hypertrophy. Such effects could be counteracted by the injection of testosterone. Thus, these workers believe that an important factor leading to an enlargement of the prostate is an imbalance between the male and female hormones, for the most part the fault being a diminished production of the male hormone and in consequence a relative excess of the female hormone. Adherents to this school of thought, therefore, believe that injections of the male hormone would prevent prostatic hypertrophy or might cause an atrophy of an already hypertrophied gland. However, with the exception of experiments on a few monkeys and a few clinical reports, these workers have at present very little substantial experimental evidence upon which to base their conclusions.

Rusch and Kundert in 1935 determined the ratio of estrogenic to androgenic hormones in 16 cases of prostatic hypertrophy and compared it with the ratio found in 12 normal individuals. They found a considerably lower excretion of androgens in the experimental group. Thus while they found the $\frac{\text{estrogenic}}{\text{androgenic}}$ ratio in the prostatic urine to be $\frac{21.5 \text{ rat units estrogen,}}{21.8 \text{ gamma of androgen}}$ the normal ratio was found to be $\frac{20.1 \text{ rat units estrogen.}}{55.1 \text{ gamma androgen}}$ Thus there was no significant difference in the output of estrogen between the normal and prostatic groups. However, there is a definite decrease in the androgenic hormones and consequently a change in ratio.

However, Hamilton, Heslin, Gilbert (1937) gave 500-1000 units of estrone over a period of 30 days to 9 prostatics. These investigators found that in this series of 9 men with a slight amount of residual urine, nocturia, and other symptoms produced by prostatic hypertrophy, there was no intensification of symptoms upon prolonged treatment with estrogenic substances. Thus if an inhibition of the pituitary was obtained by these dosages, it produced no striking relief of the symptoms upon prolonged treatment with estrogenic substances. Thus if an inhibition of the pituitary was obtained by these dosages, it produced no striking relief of the symptoms acompanying prostatic hypertrophy. Hamilton, Deming and Allen (1936) assayed the urine of 12 prostatics both before and after prostatectomy and found no significant amount of estrogenic material.

THE HORMONAL TREATMENT OF PROSTATIC HYPERTROPHY

In the face of all these divergent opinions and results one wonders wherein lies the right path, for while the experimental results are confusing, the clinical reports based mainly upon subjective evidence bewilder us. We find the same substance reported as doing entirely opposite things. The same hormone is reported by one as causing hypertrophy and by another as causing atrophy. Thus we find Dr. Lower's group of workers using an extract which they believe inhibits pituitary activity and thus prevents the pituitary gland from stimulation of the testes. They believe that relief from the symptoms of prostatic hypertrophy are thus brought about through a reduction in the amount of testosterone produced by the slowed testicular action. Another group, convinced of the significance of the reduction of androgen in the estrogenic-androgenic ratio use large amounts of artificially administered testosterone in the treatment of prostatic hypertrophy.

Lower reports more success with hormonal therapy than any other investigator. He reports the use of "Inhibin" in 76 patients with benign prostatic hypertrophy. Each patient was fed the equivalent of 60 grams of fresh beef testicular material daily. He was able to obtain definite improvement with regard to symptoms in 65 per cent of these cases. McComb and Pearce (1937) treated 17 patients with inhibin and obtained improvement in 40 per cent of these cases. However, with the exception of a few such scattered reports, no one else appears to have had the tremendous success with inhibin obtained by Lower. In this connection, it is interesting to review Clark's (1937) analysis from the records of the Peter Bent Brigham Hospital, Boston. The case histories of 93 patients with prostatic obstruction are reviewed. These patients had refused operation or operative relief was being postponed. Tracing the subsequent histories of these patients, this investigator found that 66 per cent stated that they felt definite improvement in their symptoms and this was without the use of any therapy. It is thus possible that if Lower had used controls in his clinical experiments little difference in results might have been shown between the control group and the treated group. In the experimental work conducted under Dr. Lower at the Cleveland Clinic very crude extracts were used which might contain any number of "effective" substances. For this reason, no clear statement of results has emerged from their many experiments. It must also be remembered that the bête noir of male late middle age, benign adenoma of the prostate is seen in the pathologic specimen as masses of adenomatous spheroids differing essen-

tially from the uniform hypertrophy of prostate and seminal vesicles which the experimental workers can produce.

In direct contradistinction to the work of Lower, Laqueur reports clinical improvement in 66 per cent of 133 cases treated by the known male androgen. His treatment with male hormone is based upon the idea stated above that prostatic hypertrophy results from a reduction of androgen in the androgenic-estrogenic ratio. Day also (1938) reports that the use of testosterone propionate produced clinical improvement in 50 per cent of 40 selected cases whose residual urine did not exceed 100 cc. This latter observation has been in accord with our clinical experience. We found that to produce a feeling of improvement a large dose, 25 mgm. three times a week, is necessary. No demonstrable reduction in size of the prostatic enlargement was detectable in our cases.

FUTURE OF HORMONE THERAPY

At times it appears that a rational hormone therapy is as elusive as the pot of gold at the end of the rainbow. The immediate and future problem is to establish norms and limitations of action of these hormones. A more critical discrimination between subjective and objective results will result in a firmer understanding of the subject and a more rational and sane therapy. The workers in chemical research have attempted to obtain pure fractions. This has been achieved by the brilliant researches of McGee, Koch, Butenandt and many others, and has resulted in the isolation and synthesis of testosterone. The clinical applications have been most empirical. The successful use of them in the armamentarium of the urologist awaits the outcome of the combined experimental efforts of the chemist and physiologist. Today real relief still depends upon the surgeon, for in the field of hormone research the big bad wolf of prostatic hypertrophy has us all pretty much up a tree.

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DISCUSSION

Dr. L. C. Cook (Albuquerque, N. M.):

Dr. Belt is to be congratulated on the presentation of a very dificult subject. I was especially pleased at his sudden application of the brakes, when, after presenting clean cut evidence of gratifying progress in experimental work, he had us all visioning a rational easily applied solution of this vexing problem.

In this connection, we should recall the time when the pituitary, adrenals and thyroid and their related problems seemed more hopeless than this one; keep an open mind, be optimistic. Surgery at best is only a palliative. No form of treatment is specific—only prevention will give a satisfactory solution—only endocrinology offers a hope of prevention at this time.

Meanwhile bearing in mind the different types of enlargement and the different causes of each, after carefully examining your case and securing a detailed history, not only of the immediate trouble, but also particularly of long past and forgotten symptoms, try to classify your cases into at least two groups. Those with definite adenomatous enlargement requiring some form of surgery, and those non-adenomatous enlargements cases with no enlargement, but with symptoms pointing definitely to the prostate and vesicles in which surgery is of no avail.

It is in these latter types, due to infection, sepual excesses or both, that your endocrine treatment is in some cases a valuable adjunct to your other treatment; preferably some combination of male sex hormone, adrenal and anterior pituitary gives over a three or four months period and repeated as indicated by results, if any.

Regardless of what your opinion may have been, you can't fail to realize after hearing this clean cut paper that you are in a position to substitute facts for conjecture; it's true many of the facts are based on animal experiments, but these, together with clinical facts presented, serve to dispel much of the haze; enables us to plan a more rational treatment and at some not too distant time, a more effective treatment.

It has been demonstrated that in cases of prostatic hypertrophy when the amount of both androgenic and estrogenic substance is checked that the secretion of androgenic substance is distinctly lower while the estrogenic substance was not similarly effected. This will bear further work along the line outlined by Dr. Belt.

Lower of Cleveland produced marked diminution in hypertrophy by ligation of the internal spermatic, producing an ischemia of the testicles without the bad effects of catstration which Dr. Belt has mentioned.

It is unfortunate so little time is available for discussion.

We are indebted to Dr. Belt for the privilege of hearing this timely, excellent paper.

PATHOLOGY OF VITAMIN C DEFICIENCY

After discussing the pathologic changes that occur in the bones, teeth, gingiva, muscles, eyes and the skin consequent to a deficiency of vitamin C, GILBERT DALLDORF, Valhalla, N. Y. (*Journal A. M. A.*), concludes that the anatomic effects of vitamin C deficiency are prompt to appear, certainly in the young, and that they occur, if the vascular changes are included, even in the mildest degrees of deficiency. Since clinical reports agree that subclinical scurvy, whether on the basis of chemical tests or measurements of capillary strength, is common, it may be assumed that morphologic stigmas due to the same deficiency are likewise common. However, both clinical and anatomic identification of scurvy remains, as it always has been, a matter of alertness on the part of the physician. The recently acquired understanding of the scorbutic process affords pathologists and biologists a useful tool in the study of disturbances of intercellular materials. It should be of value also in the study of similar changes in senility.

Abdominal Surgery and Wangensteen Suction

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and
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ABDOMINAL distention is a serious problem of the surgeon. Certainly it is a primary cause of distress to patients. Ottenheimer found that 59% of 400 patients suffered from gas pains after operation. Surprisingly little is definitely known regarding the causes of post-operative pains—so-called "gas pains." As Alvarez has recently stated, gas pains belong in the class with such prevalent ailments as gonorrhea and the common cold, and like them generate little enthusiasm for research as to cause and prevention. There is abundant clinical evidence, however, that whatever the cause of post-operative pain, it can often be relieved by reducing distention. There is little doubt that in the critical case relief of distention gives the patient a better chance for recovery. In the less serious case, what the patient most desires is relief from gas pains. The purpose of this paper is to present a few selected cases which demonstrate the value of a method for preventing or relieving distention.

USE OF TUBES TO RELIEVE DISTENTION

Early in this century the stomach tube became popular. The large caliber lavage tube was modified by Einhorn in 1910, Jutte in 1912, and Rehfuss in 1914. Levine introduced the smooth-tipped duodenal tube in 1921. Poissonier of France in 1906 used suction in treating perforated gastric ulcers. Westerman in 1909 first used the duodenal tube for relief of post-operative distension due to peritonitis. In 1933 Wangensteen presented at the A. M. A. meeting a convincing report of clinical and experimental use of suction by nasal catheter in treatment of intestinal obstruction. Bartlett, in discussing the paper, said he had employed this method since 1930. By 1936 duodenal suction was regarded as standard technique, where indicated, at the Mayo Clinic.

Wangensteen and others have advocated use of suction with inlying duodenal tube for relief of nausea and vomiting after operation. The chief cause of post-operative vomiting is stasis of gas and fluid in the stomach and duodenum. So impressed have we been by the promptness with which duodenal suction stops nausea and vomiting, prevents distention and decompresses dilated upper bowel, that we insert a duodenal tube and begin suction immediately post-operatively in practically every patient who has vomited before operation, or who at operation shows distended stomach or ileum. As Ochsner recommends, in surgery of the stomach, biliary tract, or spleen, in which occurrence of distention is to be anticipated, routine employment of suction wil almost invariably prevent this complication.

Use of suction aparatus has made antiquated the old dictum that an obstruction in the abdomen means an emergency operation. For by use of suction, distention of the small bowel and stomach is relieved and time is afforded to improve the patient's general condition, while studying the case carefully. X-rays must of course be made repeatedly. Wangensteen has shown that by use of suction many cases will heal without operation; that is, continuity of the intestinal tract will be reestablished. This is shown particularly true where an adhesive band has constricted a loop of ileum and resulting edema and accumulation of gas have formed a vicious circle. Relief of distention allows the edema to subside, and gas will frequently pass. If operation is necessary later, the patient's condition is better and the intestines are in better tone for an operative procedure. Where gangrene of bowel is suspected, immediate operation is of course imperative. Recently, Abbott and Johnston have been able by an ingenious method to intubate the intestine down to the point of obstruction. A small balloon is inserted along with the suction tube, inflated while in the duodenum, and is forced along by peristalsis while suction removes gas. Two tubes are required for this procedure. They report that with gas removed, often no further treatment is required. Where organic obstruction is suspected, a small amount of barium sulphate is injected through the tube. It serves to delineate the obstruction on x-ray examination.

Suction with duodenal tube is worthwhile in performing colostomy because it permits of greater delay in opening the bowel. Post-operatively, it diminishes tension on sutures in the stomach or intestine. It has been effectively used for distention following thoracoplasty and after fracture of ribs or vertebrae. It has relieved the distention of pneumonia and that caused by retroperitoneal hemorrhage or infection (see case 10). Wangensteen employs suction for post-operative evisceration, straps the wound tightly with adhesive, uses no sutures, and obtains excellent healing. With frequent use of indwelling duodenal tube and suction, acute dilatation of the stomach has ceased to exist.

SUCTION vs. SIPHONAGE

What advantage has this method over simple siphonage with a duodenal tube? Wangensteen was able to measure the gas and fluid removed by siphonage. Then he measured gas and fluid removed from the same patients by suction. Suction removed a tremendously larger amount of gas, and more fluid, than siphonage. About 70% of the gas in in-

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testines is swallowed air. Air in a column of water in the duodenal tube breaks the column and stops the flow. Suction provides an impetus to the mixed gas and fluid and removes both.

WANGENSTEEN TECHNIC

Wangensteen's apparatus is quite simple. With two large bottles, some glass tubing, and some rubber tubing, one can easily construct an apparatus. A 14F or 16F duodenal tube is inserted through the nostril into the stomach. Preferable is the special lead-tipped tube of Wangensteen, with simultaneous drainage of stomach and duodenum. Stomach contents are washed out. The patient is turned on his right side, the catheter is advanced eight to ten centimeters, and the patient is given a glass of water to drink. This procedure should carry the tube tip into the duodenum. X-ray may be used, if necessary, to check position.

The patient is permitted to drink a moderate amount of water. Most of it returns through the tube. Dryness of mouth is thus prevented, and he feels more comfortable. Fluids must be given paraorally—by vein, by rectum, and subcutaneously—to the amount of three or four liters in 24 hours. A good rule is to administer enough fluids that the patient excretes 700 to 1,000 c.c. of urine each 24 hours. Suction drains away gastric secretions, bile, and intestinal juices, and unless attention is given to fluid balance in the body, dehydration and alkalosis may result. Cases have been reported of death thought due to alkalosis. With proper administration of fluids, however, suction can be used for many days continuously.

Cooperation of nurses is essential. The duodenal tube must be irrigated at intervals to prevent stoppage with mucus or food particles. With suction functioning, only an occasional enema is needed—another break for the patient. Enemas do not relieve distention of the small bowel unless peristalsis is active. Suction does not usually remove gas from the colon, because the ileocecal valve prevents backflow. Usually, insertion of a colon tube and application of heat to the abdomen will cause expulsion of gas from the colon. Colonic irrigation with warm tap water seems preferable to enemas with irritating solutions.

DISCUSSION

One case in which we used suction demonstrated its limitations in distention of the colon. Distention was not relieved. Operation showed the obstruction to be in the descending colon. The proximal colon, therefore, formed a closed, distended tube, relieved neither by enemas nor duodenal suction. Wangensteen advocates operation where successive x-rays show distention of the colon, particularly if localized to one segment of the colon.

Frequent removing of the duodenal tube and reinsertinb it defeats its purpose, for not always does the tube slip easily back into the duodenum. With its tip in the stomach, the tube will deflate the stomach, but sometimes will not collapse the intestines. After suction has relieved distention, the tube should be clamped at intervals, and the patient allowed to drink clear fluids. If no distention recurs with the tube clamped for 3 or 4 hours, it may be removed.

Pyloric obstruction is one common indication for gastro-enterostomy. Often the stomach is greatly distended, with thinned-out walls which can be sutured only with difficulty. Post-operative contraction of the gastric muscle to normal shrinks appreciably the size of the enterostomy, with resulting decrease in efficiency of the stoma. It is desirable, therefore, to shrink the stomach before operation. The following cases illustrate the method:

Case 1. B. G., American male, aged 57, was admitted to Hotel Dieu on Sept. 14, 1937. History and x-ray diagnosis made pyloric obstruction a definite diagnosis. Operation had been performed about one year previously for relief of adhesions which caused obstruction about the duodenum. X-ray showed the stomach greatly dilated. On the day of admission, Wangensteen suction was started with a duodenal tube, and fluids were administered parenterally. On Sept. 17, posterior gastro-jejunostomy was done, using ether anaesthesia. The stomach was found much smaller than x-rays had shown a week previously. The small intestines were collapsed. After the patient reacted, suction was started again, and was kept in continuous operation for two days, after which time the tube was removed and liquid diet was begun. The patient had no nausea, vomiting, or distention at any time, and convalescence was remarkably smooth. He walked out of the hospital on the 16th post-operative day. When seen in April, 1938, he was in excellent health.

Case 2. A. H., American woman of 52, was admitted to Masonic Hospital on March 9, 1938. She gave a history of old duodenal ulcer with obstruction of the pylorus. Flouroscopy showed the stomach dilated, with almost complete obstruction at the pylorus. The patient was vomiting all solid food ingested. A duodenal tube was used to lavage the stomach, and continuous suction was instituted. At operation on March 12—under cyclopropane anaesthesia—stomach and small intestines were found contracted and small, but the colon was distended. Post-operative gastro-jejunostomy was performed. Suction with duodenal tubes was begun as soon as the patient reacted. No nausea or vomiting occurred. Gas passed from the colon when a rectal tube was inserted. Two days after operation, the duodenal tube was clamped at intervals, and fluids were given by mouth. Two days later the tube was removed, and milk feedings were begun. No distention occurred, and convalescence was uneventful.

Case 3. F. L., American male, 64, entered Masonic Hospital on November 11, 1937. History of duodenal ulcer for 14 years and of recent vomiting fitted with flouroscopic finding of a greatly-distended stomach and obstruction of the pylorus. Wangensteen suction was begun, and was continued for two days. Fluids were given parenterally. Operation was performed Nov. 13 under cyclopropane anaesthesia. The stomach was found shrunken to about normal size, and the ileum was collapsed. Post-operative gastro-jejunostomy was done. With such reinstated post-operatively, convalescence seemed progressing well. On the 6th post-operative day, however, a red, wing-shaped lesion appeared on the patient's nose. Supression of urine followed, coma developed, fever rose to 105. 4, and death occurred on the tenth post-operative day.

There was no abnominal distention until death. Autopsy showed subacute exacerbation of a chronic nephritis, with terminal pneumonia.

Contrasted with these patients is a recent case in which we were afraid to use suction because of a perforating gastric ulcer near esophageal opening. A duodenal tube might have caused irritation and hemorrhage. At operation it was found impossible to resect the ulcer, which was adherent to the liver close under the diaphragm. Adhesions were thick about the pylorus. Post-operative gastro-jejunostomy was done. The patient had some distention and a large amount of pain, and vomited once. She is progressing well toward recovery. Loucks and Fang advocate use of suction after all surgery of the stomach. They insert a duodenal tube into the stomach during operation, push its tip through the anastomosis into the jejunum, institute suction immediately after operation.

Gallbladder surgery is so commonly followed by vomiting of bile that many surgeons routinely insert a duodenal tube after operation, for gastric lavage. We have found suction with indwelling duodenal tube a better method for preventing post-operative nausea and vomiting.

Case 4. F. K., American woman, age 22, with a history of chronic gastrointestinal complaints and recurrent atacks of gallbladder colic, was admitted to Hotel Dieu for cholecystectomy. Under cyclopropane and ether, operation was performed on March 2, 1938. Altho gastric lavage was done immediately after operation, the patient was nauseated and she vomited in the evening. On the next day, nausea and vomiting of bile-stained fluid recurred. Wangensteen suction was begun, and nausea ceased. Considerable gas and bile were aspirated and after 12 hours suction was discontinued. No nausea or vomiting occurred again, no distention was observed, and convalescence was uneventful. No opiates were required after the second day. The patient left the hospital on the 10th post-operative day.

Case. 5. M. C., an American woman, age 46, with history of chronic gastrointestinal symptoms and localized gallbladder pain, was admitted to Hotel Dieu on March 26, 1938. X-ray several months previously had demonstrated a large gallstone. Under cyclopropane anaesthesia, cholecystectomy was done on March 28th. Immediately after she reacted, a doudenal tube was passed, and a large amount of bile was washed out of the stomach. Wangensteen suction was begun, and fluids were given parenterally. Next day the tube became stopped up with thick mucus, and the patient vomited once. There was no further vomiting, however, and no distention occurred. On the evening of the second post-operative day the duodenal tube was removed, and fluids were given by mouth. Convalescence was smooth. She left the hospital by wheelchair on the 16th post-operative day.

Intraperitoneal suppuration, such as follows rupture of an appendix is commonly associated with ileus of some degree. Enemas in such a case are dangerous. Suction relieves the distention. It keeps the patient more comfortable. It prevents diaphragmatic pressure, so often responsible for pulmonary complications. It perhaps makes the difference as to recovery.

Case 6. Y. P., Mexican male, age 27, entered Hotel Dieu on Jan. 3, 1938, with a diagnosis of ruptured appendix. Appendectomy and drainage were done the same day, under ether anaesthesia. On the day following operation, abdominal distention, nausea, and vomiting were experienced. Temperature ranged to 102 and 103 degrees, and the patient was acutely ill. Wangensteen suction was employed for two days, then the tube was clamped at intervals. Prontosil was administered intramuscularly, beginning the day after operation, and 45 c.c were given in two days. The patient's convalescence was stormy. He had some peritonitis, but the abdomen remanied flat. Bronchopneumonia developed. In spite of complications, he recovered, walking out of the hospital on the 28th post-operative day.

Case 7. J. D., Mexican male, age 38, was admitted to Hotel Dieu on April 7, 1938, with a diagnosis of acute appendicitis. History was of pain for 18 hours. Using 150 mg. novocaine for spinal analgesia, operation was done immediately. The appendix was found ruptured. On the second post-operative day, temperature rose to 102.8. The abdomen was distended and rigid, and crepitation could be palpated beneath the skin at the lower angle of the wound. The patient coughed, but no rales could be detected on chest examination. An enema obtained no results. Wangensteen suction was started. Fluids were given intravenously and by hypodermoclysis. Prontosil was administered intramuscularly until 25 c.c. had been given. Gas gangrene antitoxin was also given. Opiates were required for relief of pain. The colon tube was inserted at intervals, and gas was expelled freely. After 24 hours, the suction tube was clamped at intervals. At first, distention recurred whenever the tube was clamped. By the fifth post-operative day, however, the abdomen remained flat and soft, and the duodenal tube was removed, distention did not recur. There was never very profuse drainage from the wound. Temperature fell by lysis after the seventh post-operative day. The patient recovered, leaving the hospital on foot the 17th day.

Case 8. R. R., American male, age 43, was admitted to Hotel Dieu on Feb. 4, 1938. A diagnosis of peritonitis was made. At operation, under either anaesthesia, a ruptured appendix was found, with general peritonitis. Appendectomy and drainage were done. A large amount of pus was aspirated from the pelvis. Temperature rose to 102 immediately after operation, and remained high for four days, then receded by lysis. Distention began, but was relieved by suction with duodenal tube. On the fifth post-operative day, the tube was removed. Drainage from the abdominal wound was profuse. The patient walked out of the hospital on the 24th post-operative day. He later returned for drainage of a retroperitoneal abscess, and recovered quickly from the second operation.

Case 9. M. W., an American woman, age 41, entered Southwestern General Hospital on December 24, 1937, with a diagnosis of acute intestinal obstruction. Operation, under ether, found the ileum bound down with adhesions to an abscess of the right tube and ovary. In freeing this mass, pus was spilled. A left tubo-ovarian abscess was also removed. Following operation a duodenal tube was used for gastric lavage, but was removed by the nurse in about twelve hours. For two days the patient had nausea, vomiting, and distention. The duodenal tube was inserted again, suction was

started, and after 24 hours distention had receded. Vomiting did not recur, and the tube was removed next day. This patient had peritonitis, with profuse drainage, but recovered, and left the hospital in a wheel chair on Jan. 22, 1938.

One cannot help conjecturing what the outcome might have been had suction with indwelling duodenal tube been instituted on the day of admission. It is probable that operation and peritonitis might have been avoided.

One patient on whom suction was used died from general peritonits orginating from pus tubes, but her abdomen was soft and flat until death.

Retroperitoneal suppuration produces distention of the intestinal tract. One case of unusual etiology was treated, in which dilatation of the stomach recurred immediately when suction was stopped:

Case 10. J. P., American male, age 69, was admitted to Hotel Dieu on Dec. 31, 1937. Severe epigastric pain and vomiting were his chief complaints, and examination found the upper abdomen quite rigid and tender. Further examination revealed evidence of bronchopneumonia and diabetes. Operation was considered inadvisable, in spite of the opinion that surgery was needed. Wangensteen suction was employed, with relief of distention. Opiates were necessary to relieve pain. Cyanosis and delirium became marked on the third day, relieved somewhat by use of an oxygen tent. Whenever suction was discontinued by clamping the tube, distention recurred and the patient thrashed about in pain. He died on Jan. 14th. Autopsy found a ruptured diverticulum of the duodenum, with formation of a retroperitoneal abscess between liver and stomach. The ileum was contracted and empty, and presented twelve diverticulae scattered along its surface.

Ruptured peptic ulcer is a dangerous condition at best. The danger is minimized where gastric and duodenal fluids and gas can be removed preoperatively. After operation, suction decreases tension on sutures and prevents vomiting. After normal peristalsis has been reestablished and the danger of peritonitis is past, the duodenal tube affords an excellent means of providing nourishment.

Case 11. A. T., American male, age 52, had spent the Christmas season of 1935 and 1936 in the hospital. Twice he had undergone operation for ruptured peptic ulcer. At the last of these operations, occlusion of the pylorus had been found so extensive that gastro-jejunostomy had been done. He was admitted to Hotel Dieu on Dec. 9, 1937, with a diagnosis of ruptured peptic ulcer. X-ray showed a gas bubble under the diaphragm. His abdomen showed considerable distention. This was promptly relieved by suction. The following day the abdomen was opened, using ether anaesthesia. A perforated marginal ulcer was found at the anastomosis line. The ileum was collapsed. Conservative treatment was decided upon (since the patient always stood operation badly), and simple suturing was done. After operation, suction was again employed. Having undergone two previous operations, this patient heartily endorsed suction as a means of keeping him more comfortable. Two days after operation, the duodenal tube was removed and fluids were given by mouth. Except for developing a tracheitis, the patient recovered promptly, without further abdominal distention. He spent his third Christmas in the hospital, leaving on Dec. 31st by ambulance.

Intestinal obstruction has already been discussed, and its treatment with suction. Perhaps no patient is as unwelcome in the surgeon's office as the one who repeatedly returns with more adhesions, necessitating multiplied operations, without hope of cure. That Wangensteen suction may be of help in such patient is shown in the following case:

Case 12. L. S., an American woman, age 35, entered Southwestern General Hospital on Dec. 9, 1937, complaining of nausea, vomiting, and abdominal pain. Her abdomen was distended, with rigidity in the epigastrium, and acute tenderness. Temperature and pulse were normal. The diagnosis was intestinal obstruction. She had undergone three laparotomies for obstruction, each exploration revealing multiple adhesions. Suction with an indwelling duodenal tube was instituted, with relief of distention. It was necessary to administer opiates for relief of pain the first 24 hours. Fluids were given parenterally. The duodenal tube was clamped at intervals and fluids were given by mouth. Pain diminished in intensity, but recurred at intervals. After the first 24 hours, the duodenal tube was removed several times, but had to be replaced to give relief. By the third day it was possible for the patient to retain fluids with some comfort, and on the fourth day she walked out of the hospital, very much improved. She was so impressed with the Wangensteen apparatus that she took one home to use.

SUMMARY

1. Pre-operatively, distention of stomach and small intestines can be relieved by Wangensteen suction with the duodenal tube.

2. Post-operatively, distention and vomiting can be prevented by suction. In severe cases of intraperitoneal suppuration, this measure may be life-saving.

3. Whenever the diagnosis of intestinal obstruction is made, it is advisable to try decompression of the intestinal tract by suction. When gangrene of bowel is suspected, immediate operation is indicated.

4. To avoid dehydration and alkalosis, body fluid balance must be preserved while suction is in use.

Duodenal tube suction does not relieve distention of the colon.

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Toxemia of Pregnancy

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PRESENT day classifications of the toxemias of the third trimester are based solely on symptoms and clinical course of the disease and consequently due to the variety of these are likely to be too involved. One classification groups them into essential hypertension, eclampsia, pre-eclampsia, low-reserve kidney, and chronic nephritis in pregnancy. Even as simple as this is, it seems unnecessarily involved. I prefer merely to refer to them as toxemias of pregnancy of mild, moderate or severe degree depending on the symptoms and clinical findings. For example, a patient complaining of occasional headache with a blood pressure of 150/90 I would classify as a mild toxemia; one who had more symptoms and a blood pressure of 170/95 would be moderate, and anything above that would fall into the severe class. On the other hand, we might have a patient with only moderate rise in blood pressure and very marked edema and headache who would be put into the severe class. In other words, classification here is helpful in giving us a working basis, but every man must make his own interpretation when considering any one particular patient. It is necessary to include another class of patient; namely, those who have had a chronic nephritis which has become aggravated by pregnancy. We may have a true toxemia grafted upon a chronic nephritis.

ETIOLOGY

The etiology aspects of toxemias are still very obscure. As we all know there are some twenty or thirty theories attempting to explain the condition but none are satisfactory. We find the subject just teeming with opinions and theories such as autointoxication, complement deviation resulting from some foreign substance in the blood, anaphylaxis, endocrinology, deficiency diseases and electrochemical changes. In general the theories of causation may be placed under three headings: (1) abnormal substances produced by the foetus (2) toxins produced by the placenta due to tissue changes (3) some form of disturbed metabolism. The last chance is all inclusive and holds most of the more plausible and fertile explanations. We shall not delve into detail concerning any of the theories except to point out certain pieces of work that have recently appeared in the literature and which seem to indicate progress in the right direction.

J. P. Peters reports a series of 150 patients suffering from toxemia and finds that 42 of them had attacks of pyelitis previously, indicating some previous form of kidney change as a predisposing factor.

Shute, in S. G. & O., Vol. 65, P. 480, finds two general classes of toxemias, the first which follow placental infarcts and retroplacental hematomas and the second, those arising gradually with no evidence of placental pathology. He finds an excess of estrogenic hormones excreted in the former and an excess of prolan in the latter indicating in some way an endocrine imbalance. He finds the abruptio type exceeds the eclamptic type by 9 to 1.

Vorzimer, Fishberg and Langrock in S. G. & O. for May, 1937, report a series of interesting observations that definitely point to pre-existing endocrine disturbances as prime causative factors. They find:

(1) That women who developed toxemia averaged 21.8 lbs. more in weight before the onset of pregnancy.
(2) That the incidence of marked obesity is great.
(3) There is an abnormal distribution of hair about the body.
(4) 65.8% had some abnormality of stature.
(5) 55% of the toxemias had acromegaloid

facies in contrast to but 5% of the non-toxemic group.

(6) 88% of the toxemic women had a male type of pelvis.

(7) The average basal metabolic rates were definitely lower.

McIlroy and Rodway, (J. Ob. & Gyne. for Brit. Emp. April, 1937) report 75 cases of toxemia in which the average age was 33. These women gained 50% more weight in the last 12 weeks than the normal group.

Anselmino and Hoffman (Ztschr. fur. Gebur. & Gynak, 1936) conclude by accurate quantitative work that the blood and urine of patients with hyperemesis or eclampsia contain unphysiologically large amounts of gonadotropic substances which are mostly of placental origin.

Hofbawer says in pre-eclampsia and eclampsia there is an increased amount of adrenalin present in the blood with a consequent spasticity of the arterioles. He also says there is an increased amount of posterior pituitary secretion and the lack of neutralization of these hormones in the liver and capillary endothelium produces the symptoms.

Patterson (in the British Med. Journ. Feb., 1937) gets marked improvement in severe pre-eclampsia by the use of progesterone.

These papers from various workers in different parts of the world point significantly to a primary endocrine factor underlying the profound physical and physiological changes occurring in patients with toxemia of pregnancy.

TREATMENT

In the treatment of the mild toxemias various basic fundamental measures are in general use. Among these are:

(1) Absolute rest in bed.
(2) Magnesium sulfate catharsis.
(3) Salt free diet.

If those three measures are carried out conscientiously, I believe we are giving most valuable treatment to the patient. However, a few other measures are very efficacious such as the addition of a milk diet or a meat free diet in certain cases. All of the available evidence seems to point to the meat proteins, as having a detrimental effect on the course of the toxemia. This latter dietary restriction has insinuated itself into the practice to such an extent that it is now regarded as an almost inviolable dogma in the treatment of these cases. Recently, however, a few pioneers have arisen to show that the practice of withholding meats is unsound and harmful. The withholding of salt from these patients is probably of greater importance, because a large intake of salt causes water retention and edema. In pre-eclampsia the tissues show marked increased affinity for salt, which fact has dictated one of the most rational means of treating the disease.

A few details recommended by M. Edward Davis in S. G. & O. for February, 1938 for the treatment of mild toxemias are as follows:

(1) 10 hours of sleep nightly.
(2) Rest 1 to 2 hours morning and afternoon.
(3) Phenobarbital ½ to 1½ grains 2 or 3 times daily.
(4) Diet consisting mostly of carbohydrates and limited amount of proteins.
(5) Salt-poor diet.
(6) Omit fats from diet.
(7) Occasionally a diet restricted to milk, eggs and vegetables can be used advantageously over a long period of time.
(8) Watch the water balance carefully by measuring intake and output and weighing the patient twice a week. The return of a normal water balance should be reflected in a decrease in B. P. and diminished albuminuria.

Davis believes the restoration of the normal water balance to be of prime importance. He does not believe the restriction of water intake necessary. If the tissues are made salt poor by a salt-free diet water can be released by the tissues into the blood stream and thence through the kidneys. In other words, the change in sodium chloride balance is followed by a change in water balance so that an increased fluid elimination occurs. Hypertonic glucose injections help in two ways; one, by dilating the capillaries of the kidney, which fact is made fairly certain since the dilatation can actually be seen in the capillaries of the finger nail bed. Secondly, glucose actually draws water from the tissues and part of the glucose enters the tissues to displace sodium chloride. In this way the blood volume increases, resulting in a diuresis and excretion of water and sodium chloride. If glucose is used long enough a normal water balance is restored.

At this point let me append a list of the measures advocated routinely in McNeile's Clinic for the more intensive treatment of cases severe enough to be hospitalized: (J. A. M. A. Aug., 1934). They are:

(1) Absolute rest in bed.
(2) Milk diet.
(3) Measure intake and output of fluid.
(4) Mag. Sulf. catharsis. T.
(5) Urinalysis—24 hour daily specimen.
(6) B. P. determination T. I. D.
(7) 20 c.c. of 10% mag. sulfate intravenously for B. P. over 150.
(8) 300 c.c. of 25% glucose 1 to 4 times daily.
(9) Chloral Hydrate plus Sod. Bro. rectally for restlessness.

If symptoms improve the author adds a basic diet. Perhaps the list can serve as a guide for use in our own practices.

If measures similar to the above are of no avail, we are faced with the necessity for termination of the pregnancy. If a primipara is being treated, Caesarian section should be considered first, especially if the toxemia is so severe as to border upon an eclampsia. If the toxemia be moderate and in the last few weeks of pregnancy medical induction with castor oil, quinine and minim doses of pituitrin or thymophysin may solve the problem. Rupture of the membranes may be carried out with these. In multiparae, induction and delivery from below is generally the choice.

In clinics where careful examination and good prenatal care is given the incidence of eclampsia

has been reduced to 1/5 or 1/3 over the incidence in the general population. Furthermore, when eclampsia did develop the results of treatment were uniformly better in those having thorough care.

The treatment of a patient with toxemia and in convulsions is an acute emergency. We are all familiar with the old Stroganoff treatment where morphine gr. ¼ is given as soon as the patient is seen, followed in one hour by 20 gr. chloral and 60 gr. Sod. Bromide per rectum. This being followed in 2 hours by ¼ gr. morphine and from then on the chloral and bromide is alternated with morphine every few hours.

Most obstetricians use some form of the treatment except that magnesium sulfate and glucose are given intravenously in addition.

In a more recent article published in the Journal of Ob. and Gyn. of the British Emp. April, 1937, Stroganoff reports his results with the use of magnesium sulfate only. In 201 cases of eclampsia so treated his mortality was only 3%. He says the salt is more toxic to the nervous system than chloral hydrate since he has observed 2% of psychoses following its use.

In McNeile's Clinic routinely the following orders are followed:

(1) Mag. Sulf. 20 c.c. of 10% solution every hour until convulsions are controlled. (Subsequent doses are based on recurrence of irritability or convulsions.)
(2) Quiet, private rooms kept dark and nurse in constant attendance.
(3) Inhalations of pure oxygen following convulsions.
(4) In labor 20 grains of chloral and 60 of sodium bromide is given for restlessness.
(5) Gentle restraints are applied.
(6) Intravenous glucose when patient is made quiet.
(7) Forceps in second stage if progress is slow.
(8) Caesarian section only for Bona Fide obstetric indication.

As you will see this treatment has as its strong point the control or elimination of convulsions immediately by hourly doses of mag. sulfate. Extreme caution must be observed. The physician must watch the respiratory rate carefully as mag. sulfate is a powerful depressor of nerve activity and there is danger of death from respiratory paralysis from over dosage. In any event, as a precautionary measure a 10 c.c. syringe filled with calcium chloride solution should be at hand if hourly doses of mag. sulfate are to be used. Intravenous injection of the calcium will always revive the patient excessively depressed with mag. sulfate.

From my own experience I have found the following general routine of most value:

(1) Morphine sulfate gr. ¼ is given intravenously as soon as patient is seen.
(2) At the same time 20 c.c. of 10% mag. sulfate is given intravenously.
(3) In ½ hour if the convulsions are not controlled another ¼ gr. morphine is given subcutaneously.
(4) When the patient has been made quiet, 1000 c.c. of 10% glucose into which has been poured 20 c.c. of 10% mag. sulfate is started intravenously.
(5) Following this chloral and bromide may be given for restlessness at intervals.

It has been my experience that labor usually starts within 12 to 20 hours after the patient is admitted. If labor has not ensued by then, measures are taken for a termination of the pregnancy either abdominally or from below. In general Caesarian section is considered first for primipara and delivery from below for multiparae.

CONCLUSION

In conclusion, it is strongly urged that we consider 150 mm. of Hg. as a systolic pressure, and 90 diastolic as the main dividing line between mild and severe toxemias and that pressures above those stated be viewed with alarm. If this is done and adequate measures be instituted, eclampsia can be prevented.

1116 Professional Bldg.

Lead Absorption and Lead Poisoning, III

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PROPHYLAXIS

THE ideal way to handle the lead situation in industry is to install equipment to carry away the lead dust and fumes, so that the employees will be subjected to the least amount of exposure. Non-industrial lead poisoning has become practically a thing of the past in the United States because of the vigilance of the United States Public Health Service. There are, however, scattered accidental cases such as reported in Baltimore and Memphis. Millions of dollars have been spent by industry to improve the equipment for elimination of lead hazard to workmen. In many states there are laws to protect the workmen. In these states it is very expensive to disable a man by lead, and industry has been compelled to clean up in self-preservation. The state of Texas to date does not have a law compensating a workman for lead poisoning, but even so the El Paso Smelting Works has spent large sums each year that I have been associated with them, for eliminating the hazard and I would venture to say that it has been reduced 70 per cent during that time.

The whole basis of treatment of lead poisoning is to control the calcium metabolism. We know from the experiments of Aub and his associates that calcium is deposited in the trabaculae of the

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bones, which is the store-house of readily available calcium. By supplying an over-abundant amount of calcium to the system any circulating lead is picked up with the calcium and stored with it as a very insoluble tertiary lead phosphate. We also know that lead when stored in the bones does no harm. It is the circulating lead in the body that does the damage.

The court litigation, in deciding whether or not lead poisoning is the cause of death, no attention is paid to the amount of lead in the bones, but if 1 or 2 mgm per 100 grams of soft tissue is found, lead is considered a contributory cause of death. Therefore, in lead poisoning, the first thing to do is to get the lead out of the circulation and into the bones where it can do no harm. Naturally we do not want to add to the burden from outside sources, so we at once remove him from all lead exposure. An over-abundance of calcium should then be supplied. This is done by giving a diet high in calcium and calcium gluconate by mouth, while in severe cases, for example lead colic, we give calcium gluconate in the vein. At times it is very spectacular to see a lead colic disappear as if by magic after an injection of calcium. About a year ago one of our men consulted a physician about an abdominal pain. He was advised to have an immediate appendectomy. His appendicitis was cured with two injections of calcium.

The question arises what are we going to do when we reach the point where all the lead is out of the circulation and stored away in the bones where it can do no harm as long as it remains there? There are two ways in which to handle the situation. The first is to allow the patient to go on his way and avoid absolutely any exposure to lead. Within a year he will have excreted the excess of lead so gradually that no symptoms or disturbance of any kind will be perceptible unless he experiences some metabolic upset that is accompanied by a fairly severe acidosis; for example an alcoholic debauch or a severe case of influenza or pneumonia.

During the Christmas holidays in 1936, I had two men apparently getting along all right, with their absorption and excretion well balanced, but after a few days of hard drinking, they developed intestinal colic. They had a great deal of lead stored in the bones and developed sufficient acidosis to mobilize enough of the stored lead together with what they were absorbing in their daily work to produce the colic. Shortly after that another man developed intestinal colic two days after contracting a septic sore throat.

Many non-industrial cases are handled in this manner and I know of one industrial plant in the east which maintains a truck farm, to which their lead cases are sent and no other treatment is given.

It is the consensus of opinion in industry that we de-lead all our cases for many reasons. We complish in six weeks what it takes nature one year to do. There is much less danger of palsy and permanent disability. The man loses much less time and the chances for adverse lawsuits are also much less.

The second way in which to handle the situation —the man is away from the lead hazard—all his lead stored in the bones and he is symptom free. The first thing to do is to put him on a diet poor in calcium. He then takes in half the calcium that he excretes. Whatever excess calcium he needs is mobilized from the bones and along with it comes some lead. On that diet alone excretion of lead starts. After three or four days it is necessary to accentuate the mobilization of calcium and lead, which is accomplished by producing an acidosis. In acidosis calcium is always pulled from the bones because that is one of the mechanisms for counteracting a severe acidosis.

There have been many different acids used to produce this acidosis—such as hydrochloric acid, lactic acid, citric acid, and phosphoric acid. Parathyroid extract has also been used successfully in pulling out the calcium, as have larges doses of thyroid and viastreol. Of all methods used, however, ammonium chloride has been found the most practicable. In the body the ammonia is changed to urea, a neutral salt, while the chloride ion remains an acid radical. With this treatment we produce a low Ph in the urine but the body is so well organized to prevent an acidosis that the doses of ammonium chloride we use do not usually give a severe acidosis. We begin with 3 grams daily for three days, then 6 grams for three days and then usually increase to 8 grams daily and continue with this last dosage until the month's de-leading treatment is completed. After a month's de-leading, the patient is usually so tired of the treatment that we discontinue it.

We have learned by experience that after a month of continuous treatment, all the clinical symptoms have subsided and the blood count has returned to normal. At this point then we stop the de-leading and give a high calcium diet for for two weeks and then send him back to work. The high calcium diet fills the trabeculae of the bones with clean calcium. During this whole procedure, the patient also receives adequate doses of iron to care for his secondary anemia.

About a year ago I gave orders that every man in the lead department should have three doses of iron daily and the marked difference it has caused both in appearance and well-being of the men is unbelievable. In fact it was so noticeable that men in other departments have asked to be given iron.

We know from experience that a man should not return to the lead hazard after suffering plumbism even though he has taken the course of treatment. We at the El Paso plant allow him one more chance in the lead department unless he also suffered palsy. We take a blood count every two weeks. If it starts going up he is removed from the hazard at once.

PROPHYLACTIC TREATMENT

Dr. Aub at our meeting in Chicago related experiments carried out by Behrens and Baumann of Germany. They injected thorium, a radio-active salt, intravenously into rats and shortly after took x-ray pictures of the bones, a large amount of calcium gluconate was given intramuscularly and by mouth before they injected the Thorium. This animal deposited very little Thorium in the bones. Another animal was given ammonium chloride before they injected the Thorium. This animal did not deposit any Thorium in his bones.

With these experiments in mind, Dr. Aub asked us to try both these methods as a means of prophylactic treatment. To some men give lots of calcium and keep calcium stream toward the bones and the trabeculae filled with calcium; to others give ammonium chloride and keep the calcium stream away from the bones. During the last year I have tried both methods, but after the first six months discontinued giving calcium, as these men began to have high counts. The men receiving the ammonium chloride improved. I now give ammonium cloride in doses of 2 to 3 grams daily as a prophylactic when a suspicious count is found and these men have shown consistent improvement. Lead poisoning in the El Paso plant has now practically become a thing of the past.

COMMENT

In preparing this paper, most of the information has been obtained from Aub's book on Lead Poisoning and his papers on the different phases of the subject. I have used his references and in some instances his statements word for word. At the meeting of the American Medical Association in 1935, five men presented papers on different phases of lead poisoning, so you will readily understand the futility of attempting to do justice to this most interesting subject in one paper. I have merely attempted to outline how lead gets into the body, what it does to the body after it is absorbed, how it is excreted and the treatment that is used today by the majority.

In the near future the legislature of the State of Texas contemplates the enaction of a law compensating the workman for lead poisoning. When such a law goes into efect some of us will probably meet in court. We should keep at least two things in mind—

First, that the blood count is the main deciding factor in making a diagnosis of lead poisoning, and

Second, the difference between lead absorption and lead poisoning.

Any individual who is exposed to lead dust or fumes, and to a lesser degree to lead by mouth, is bound to absorb lead. In industry it is our aim and good intention to keep our men under such rigid observation that they do not develop lead poisoning. When we find a man's blood count going up and we institute a prophylactic treatment, it does not mean that he has lead poisoning, but merely that he is absorbing an unusual amount of lead and it is our duty to protect him against additional injury to his body and so prevent lead poisoning. We may deem it necessary to remove him from lead exposure even, in order to carry out our prophylaxis, and it is still not lead poisoning. It should not be called lead poisoning until such time that the body tissues have been injured to the extent that a high Basophilic count is found, with constant finding of a stippled cell to 1 or 2 fields, a severe anemia, a colic or wrist drop; in other words not until he is really incapacitated.

Mills Bldg.

Extrauterine Pregnancy of Twenty-nine Years Duration With Incidental Ovarian Carcinoma

CASE REPORT

H. M. MORTIMER, M. D.
and
F. H. CRAIL, M. D.
Las Vegas, N. Mex.

MRS. S. U., a Spanish American, who spoke no English, aged 53, was first seen Oct. 3, 1937, at which time she complained of pain at intervals in the right lower quadrant of the abdomen and suprapubically since July, 1937. There were no associated gastro-intestinal or genito-urinary symptoms except nocturia occasionally. The pain did not radiate. Her eyesight had been gradually failing in the past two years. Past history showed no serious illnesses. One child born in 1905. No other pregnancies. Menopause in 1934, with no abnormal symptoms.

EXAMINATION

Physical examination revealed a rather obese white female who looked older than her age. Weight, 152¾ pounds. Height 5 feet 2 inches. Skull and scalp: negative. Eyes: pupils round and equal and react to light. Right optic disc margin appeared blurred. Nose: negative, except for a sessile papilloma on right side of bridge. Ears: no discharge; drums normal. Tongue negative. Teeth: upper and lower incisors missing; right upper first molar carious. Tonsils small. Neck: no adenopathy or thyroid enlargement. Chest: normal shape. Breasts: large and pendulous. Lungs: normal findings throughout both. Heart: normal size; regular rhythm; rate 76; no murmurs detected;

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THE MYSTERY OF ETHICS

Medical ethics are but poorly understood by the average layman. To those not frankly mystified by what seems to be a complicated, out-worn code, the system of philosophy of physicians is still inadequately comprehended. Efforts of various agencies, individual or collective, to interpret certain portions of the code of medical ethics go astray, oftimes lamentably.

What is there about the Golden Rule that is mysterious? That maxim of conduct may antedate the horse and buggy days, but even so bears high merit still. The dilettante or the Great Thinker alike should be able to understand this statement of behavior towards one's fellow. And the code of ethics of the American Medical Association is but an elaboration and extension of the simple, well-known Golden Rule. The physician adhering to this way of life simply binds himself to do unto his brother and his patients as he would be done by. Is there anything out-moded in such a code? American physicians, the best-trained in the history of the world, think not.

EL PASO COUNTY'S "MEDICAL TRUST"

Now that the physicians of El Paso County are under investigation as a trust by the United States Department of Justice, it might be of value to recall some of the recent activities of that group, presently tarred with the charge of "monopoly in restraint of trade." Regardless of the outcome of the government's suit against the physicians of El Paso and America, the wedge is partially introduced in the scheme to destroy the confidence of the general public in its family physicians. But before this smear-business goes too far, let us examine a phase of the trust's activities here in our own community.

In El Paso there is a splendid charity hospital, operated jointly by the City and the County, for the benefit of the sick poor of the locality. Some 62 physicians and 6 dentists, all members of the "medical trust", give their services night and day to those unfortunates who apply to this institution for aid. Those services are given without pay of any sort. In addition, these physicians and dentists, being good citizens all, pay their full share of the taxes assessed for the maintenance of this charity hospital.

In the year 1937, the "trust members"—the family doctors of El Paso—consulted with, examined, advised, diagnosed, treated 4,848 new cases in the Out-patient Dispensary of El Paso City-County Hospital. They spent 580 hours doing this. 3639 sick persons had to be put to bed in the hospital. El Paso physicians, scarcely aware of the presence of a "medical trust", spent about 2,000 hours in the hospital wards and operating rooms caring for these sick folks. Of course, they had some help, too—from four or five young apprentices, recent graduates of medical schools brought to high status by the American "medical trust", which has battled for years to enforce the highest scientific standards known in the world. It was necessary for the members of El Paso's "medical trust" to do 1,062 operations for the sake of sweet charity in this "trust-managed" hospital. Not one cent was received by any of these men for these operations. But for timely surgery many of these patients would have died. Some may say, have said, that death might be a good thing for some of these cases. But the physician "trust" member does not feel qualified to speak the will of God, and scarcely concedes the right of others to do so. So he continues, in his humble way, to give the best that is in him to every sick person crying for his help. He was sworn to do that by his "medical trust", and he subscribed voluntarily to that code, believing it to be good.

During 1937 El Paso's "medical trust" brought 343 babies howling into the dawn at City-County Hospital. There were no fees for this. The babies and their mothers were given the best care obtainable. Sick people often require mdicine, so 7556 prescriptions were given to them last year at El Paso's charity hospital by the staff members. Sometimes people die and an autopsy is necessary for medico-legal or scientific reasons. 146 post-mortem examinations were done by the "medical trust" at City-County Hospital in 1937.

There are other institutions and public clinics in the city of El Paso, organized to obtain the free services of El Paso's "medical trust" in the care of El Paso's sick poor. In these places, too, the "truster" gives his time, skill and knowledge with

no remuneration whatsoever. Everyone else connected with these enterprises gets paid in the current coin of the land, but not the doctor. What does his "trust" say about that? Well, that snide trade union naively holds that to serve the sick poor without remuneration is honorable, is a privilege, a duty!

Now that the breast-beaters of the Republic are howling for tax-paid medical services, the physician might well inquire if the dizzy spenders-of-other people's-money intend to provide for him in this new millenium at least the remuneration of the janitors and orderlies of these projected free clinics. If such intention be present, just how much could the tax payers of El Paso County be talked into paying the local medical profession for services rendered the sick poor of this territory in 1937?

To complete the record it should be said that in addition to his services to the indigent sick in organized clinics and hospitals, the physician "trust member" donates his services in his office and in the homes to 15% to 25% of his entire list of patients. And then he is often enough defrauded out of 15% to 20% more by people who could and should pay.

With the hosannahs of today's Uplifters ringing down the land in furious joy over the ukase that America's physicians are to be busted as a 'trust", it seems that the time has come to lift the bushel basket off the light. With the present bedding-down of politicians and quacks it would seem apropos to scan at intervals the sorry spectacle of the mating. It then is not amiss to point out in various localities just what the "medical trust" has done, heretofore quietly, in behalf of the sick poor.

As anyone can see, it was a rather busy year in 1937 for El Paso's "medical trust". The activities in this city are matched by our brothers in Phoenix, in Albuquerque, in Tucson, in every community of souls in the breadth of America.

Sometimes we members of America's "medical trust" are called damned fools for giving away that which we bought with years of our lives, with thousands of our dollars. But it seems to us that there's something rather glorious in being that kind of a damned fool!

A BAD PRESS

The plaint is often heard that the American Medical Association, composed of some 110,000 of us who have dedicated our lives to the task of lengthening life and easing pain, has not publicized the glories of American medicine sufficiently. It seems that today an institution must bombard the general public with propaganda intended to enhance its status in the collective eye of the land. Even various departments of the federal government maintain clever publcity staffs, which, in effect, endeavor to sell all of us more and more government.

Notably efficient as a publicity expert was Charley Michelson, in his project of smearing Hoover for the Democratic party. Remarkably successful was Ivy Lee of New York in transforming John D. Rockefeller from the image of a horned devil to that of a soft-winged angel in the public retina.

Just what is the message and the motive of American medicine? Simply to get people well and keep them so. Then why, as hinted by Robb[1], is a publicity department necessary for American medicine? It has always been felt that our good works, after all, stated our case before the bar of public opinion much more convincingly than could a barrage of hot air over the countryside. Hot air may be defined as a most expansile gas, and having said that, little else remains. Physicians don't like gas pains.

(1) Robb, Arthur: Shop Talk at Thirty; Editor and Publisher: p. 8, Oct. 8, 1938.

ARTIFICIAL RESPIRATION

Post-mortem examination of persons drowned has many times shown an absence of fluid in the lungs. Some of these patients had received artificial respiration over a lengthy period. Why did they fail to respond?

Banting[1] and his associates at the University of Toronto have investigated this problem. Normally there is a protective mechanism present in the larynx which prevents water or other objects from entering the lungs during the act of swallowing. Banting says that in many drowning persons the same mechanism operates, only to a greater degree; and thus a laryngeal spasm develops. If this spasm persists after the drowning person is removed from the water, there is no possibility for air to enter the trachea and be conveyed to the lungs. Thus no amount of artificial respiration will prevail in the face of such an obstacle.

The immediate remedy is that the physician should pass a catheter, or any hollow-tubed in-

"MEDICALLY INDIGENT"

The following definition of "medically indigent" was discussed by the House of Delegates of the American Medical Association at its special session in Chicago, September 16 and 17, 1938. The definition agreed with the views expressed by many delegates.

"A person is medically indigent when he is unable in the place in which he resides, through his own resources, to provide himself and his dependents with proper medical, dental, nursing, hospital and pharmaceutical care and therapeutic appliances without depriving himself or his dependents of necessary food, clothing, shelter and similar necessities of life, as determined by the local authority charged with the duty of dispensing relief for the medically indigent."

strument, into the trachea. Free passage of air into the lungs will then be facilitated in coordination with the passive movements of the chest maintained by the person attempting artificial respiration. Certain drugs, as atropine or morphine, may help in relaxing the spasm. When possible a mixture of Co2 and O2 should be administered.

Armed with this latest contribution, the attending physician may save a life some day that otherwise might be lost. It would seem useful to instruct life guards and others concerned in the technic of passing a hollow tube into the trachea.

(1) Banting, Sir Frederick: Artificial Respiration in Cases of Drowning; Canad. Med. Assoc. J., Sept., 1938.

EXTRAUTERINE PREGNANCY OF TWENTY-NINE YEARS DURATION WITH INCIDENTAL OVARIAN CARCINOMA

(Continued from page 447)

tones of good quality. Abdomen: rather obese and poor muscle tone. Palpation revealed a mass in the left lower quadrant about the size of an orange, which seemed rather soft and slightly movable. There was a mass on the right and suprapubically which extended upward almost to the umbilicus. It was hard and immovable.

Pelvic examination revealed the cervix to be slightly lacerated bilaterally. The posterior culde-sac was bulging with the tumor mass which seemed to move with pressure and the motion seemed transmitted to the suprapubic and right sided mass.

The urine was acid: Specific gravity .1023; and was negative for albumin or sugar. Negative microscopically.

A diagnosis was made of a fibroid uterus with possible left ovarian tumor of cystic nature.

Operation was advised but refused by the patient at that time. She was then not seen again until December 1, 1937, at which time she said she had had more pain in the right lower quadrant and that it had radiated down the right leg. Examination revealed no obvious changes from those observed previously. She thought she would consent to operation in a short while. On December 3, 1937, was seen in her home where she complained of increasingly more severe pain in the right lower quadrant which she stated now radiated upward and to the back on the right side. She was removed to the hospital and a laparotomy performed December 4, 1937.

OPERATION

On opening the abdomen by a suprapubic midline incision, a cyst was found in the left lower quadrant which was attached by a long pedicle to the right adnexal region. The cyst measured 12½x9½x7 centimeters. There was a large irregular mass about the size of a large grapefruit to the right of the midline apparently rising up from the pelvis. It was attached to the posterior pelvic wall and on the right was attached to a firm, irregularly nodular mass which infiltrated the right abdominal wall. This mass apparently originated in the right broad ligament and included the fimbriated end of the dilated right Fallopian tube. The right ovary was not distinguished. Left tube was normal. Left ovary was cystic and almost the size of a plum.

The more centrally located mass was carefully incised and found to contain a brown-yellow, thick, creamy, greasy material, and the bones of what was apparently a nearly fully developed fetus. A total of 193 skeletal bones were removed from this sac and matted hair was found and removed. The wall of the sac was about three milimeters thick and laminated. The inner layer was peeled off from as much as possible of the sac's inner surface. In one place a bone had partially penetrated the wall of the sac and at that location the wall was about six milimeters thick.

It was impossible to separate this sac from the surrounding structures and so it was packed with iodoform gauze and left open, the gauze being carried out the abdominal wound.

The uterus was of normal size and shape and lay anteriorly to the sac.

A small piece of nodular tissue, apparently a metastatic involvement of the omentum by the right sided pelvic mass, was removed for biopsy. A report by Dr. J. D. Kirshbaum of Chicago showed this to be a "metastatic adeno-carcinoma apparently of ovarian origin."

COMMENT

Several days later one of us (F. H. C.) elicited the following history: In 1908 the patient thought she was pregnant and her abdomen progressively enlarged. She missed eight menstrual periods and some time after that she thought she had a miscarriage but never had knowledge of the passage of a large fetus any time thereafter. For about eight more months she was not well, being confined to bed part of the time because of abdominal pain. She gradually improved and her abdomen gradually regained normal size and her menses had been regular until 1934 when the menopause occurred. No subsequent pregnancy had ever occurred.

From this history and the findings revealed at the operation it is believed that this patient had an abdominally implanted extrauterine pregnancy which nearly reached full term development and which went on to adipocere transformation with no symptoms until 29 years later, and even then the pain was possibly caused by the carcinoma of the right ovary.

The patient had a good postoperative course but a sinus exists to date from which a moderate amount of foul-smelling purulent material discharges. She is gradually losing weight and strength.

Special Section

Arizona State Medical Association

J. D. HAMER, M. D.
Associate Editor

The following editorial appearing in the ARIZONA REPUBLIC under date of October 18, merits the attention of the medical profession of this state. Read it and then send a word of appreciation to the Editor of the newspaper in question.

THE FIRST FORMAL STEP TO BE ORDERED IN THE REGIMENTATION OF PHYSICIANS

It was announced on Saturday that the government yesterday would ask a grand jury for criminal indictments against the American Medical Association and the District of Columbia Medical Association, an affiliate, charging a violation of the anti-trust law in opposing the Group Health Association of the District of Columbia.

Of the many attempts that have been made in the last six years to introduce dictatorial methods into this country, in the absence of legislative enactments, this we believe is the most brazen. Here is invoked a law with which the present administration seems never to have known what to do. In the earliest days of the administration, in the construction of NRA, it found the way blocked by the Sherman anti-trust law of the early nineties. The administration secured the suspension of the law from a facile congress which would have surrendered its B. V. D.'s for the asking and the states which had enacted anti-monopolistic laws were called upon also to suspend them.

Later, in the course of the experimentation which was feverishly going on in Washington, it was found advisable to put the Sherman law into operation again. It is now proposed to apply it to a purpose with which there could not have been the remotest relation at the time of the enactment of the law.

We suspect that the department of justice would not have invoked this act against the American Medical Association if there could have been a law designed specifically to carry out the purposes of the crack-pots in their designs for the regimentation of the physicians and for the regulation of the practice of medicine. They would have preferred a law defining interference with their plans as less majestic, to be punished by some such a semi-judicial body as the National Labor Relations Board and with such a mentality as that with which that agency is equipped.

There are some outstanding facts in this controversy. One is that the practice of medicine is a legitimate private activity, its members have a legal right to organize among themselves to raise the standard of practice for the benefit of those requiring medical or surgical attention. These activities of the organization have been highly successful, so that the practice of medicine in recent years has been brought to a plane higher than any it had ever occupied. That would seem to have been a sufficient accomplishment to date, giving certain promise of further achievement. But not for the socialistic crack-pots demanding a federalization of the practice of the healing art. It is not charged that as a result of the organization of the physicians there have been sordid agreements as to fees. While in separated localities there may be a semi-understanding as to fees, the rule of ability to pay, more generally prevails. Many of the bills of physicinas are never paid as it may have been understood at the time the service was rendered payment would probably be impossible. This, however, is not a matter now in controversy.

The basic fact is, there is a large class of physicians who insist upon certain standards and decline to enter into association with those who do not conform to those standards. It is to enforce such association that the anti-trust law has been called upon—something that could not have been conceived at the time of its enactment, for at that time, almost a half-century ago, Communism in the United States could not have been dreamed of. If one could then have looked forward through the next half century he might have awakened in despair of the republic.

If the Sherman act can be made to serve the purpose now proposed, we can conceive of no other purpose to which it cannot be applied.

The preamble of the constitution within the last half dozen years has been substituted for the constitution itself. With that, the inter-state commerce clause and the anti-trust law, everything would nicely set for a dictatorship.—*Arizona Republic, Oct. 18, 1938.*

REVIEW OF PROCEEDINGS OF HOUSE OF DELEGATES SPECIAL MEETING, CHICAGO, SEPT. 16, 17, 1938

For the information of the membership of the Arizona State Medical Association, an outline of pertinent statements, premises, and policies as adopted by the House of Delegates in Special Session, Chicago, Sept. 16, 17, 1938, is hereby presented. The Committee on Medical Economics of the Arizona Association met on Sunday, October 23 to outline preliminary plans to carry out the policies laid down by the House at this Special Session. PLEASE READ THIS OVER CAREFULLY AND BE PREPARED TO COOPERATE WITH PLANS OF THE COMMITTEE ON MEDICAL ECONOMICS.

a. Governmental participation in the solution of the health problems of this nation should be carefully planned, and the limitations of governmental participation should be clearly defined.

b. The economic situation of an individual group or person has a definite relationship to the health of the community as a whole, and so to medical needs and service. Attempts to service the poor without paying attention to the fundamental economic questions which result in poor food, inadequate clothing and shelter, and unemployment are sure to fail.

c. Proposed changes in our present system of medical service, which is, no doubt, the best in the world today, must measure up qualitatively and quantitatively or even improve our present system. The proposed changes must improve our present system and present condition, and must not replace short comings now existing with entirely new evils. They must not hamper ethical relationships, research, individual initiative, medical educational standards, or hospital standards and free choice of physicians, free of political interference.

d. Whatever plan proposed with regard to medical care must be tested and accepted or rejected in relation to its influence on morbidity and mor-

tality of the community affected. Medical consultation should be considered by any or all governmental agencies before adopting vast plans affecting the health and medical care of our people.

e. The American Medical Association does not oppose experimentation in new forms of medical practice, either by individuals or governmental agencies, so long as they conform to state laws and to approval of the county medical societies, and which are guided by the ten principles adopted previously by the House as essential to the introduction of any new program of medical care.

f. The A. M. A. never opposed group hospitalization plans as long as they do not practice medicine, or presume to furnish medical services. It has never opposed suitable plans for the care of the indigent by municipalities, state or any other agency, or plans for the border-line indigent cases, or to government aid on providing food, clothing or shelter. It has opposed, however, the adoption of any form of state medicine.

g. The A. M. A. has never opposed suitable participation by the government or any agency in the practice of preventive medicine, and in any legitimate function of the government in relationship to the care of the sick.

h. The A. M. A. has never opposed the principle of insurance as long as the insurance is not subject to political manipulation and administration, and the devotion of considerable portion of the funds to payment of a vast number of lay employees not giving the service, whose intimate concern is the maintenance and perpetuation of a political organization, or the expansion of such organization to wield greater and greater power in the affairs of the nation.

i. This organization does not oppose insurance against the costs of sickness, disability, unemployment. old age or death, but it does oppose any interference by an outside agency, commercial, governmental or otherwise, into the relationship between the physician and his patient.

j. The A. M. A. will consistently oppose the attempts to make medical care a political issue. This organization fears political bureaucracies. Likewise we oppose legislation which would have the effect of vesting in some governmental agency the power to enforce its decrees on patients and doctors.

We cannot conceive how this government can do the job at one-tenth the cost, for one-tenth efficiency in its operations. Our knowledge of questions of medical care is the product of long years of effort and experience at the bedside of the afflicted and at the operating table, and is not gained by a brief study of a few lop-sided statistical studies of W. P. A. workers of doubtful accuracy.

l. The A. M. A. is deeply conscious of the improvements to be made in the distribution of medical care, but it is our duty to oppose in every way at our command unsound doctrines which would eventually lower the standards of medical care to that found in other nations where the physician has been made subservient to political control. Likewise, we recognize that no one plan can fit the country as a whole, hence the needs of every section must be studied and treated separately.

m. We recognize that the welfare of mothers and new born babies continues to be a national problem of major importance in many sections, and that the present program as now operating is susceptible to extension, and deserves our support.

n. Yet, we feel, because of training and experience, we are best fitted to furnish the leadership in all movements to improve these services. This place of leadership must be recognized, and no paternalistic, socialistic or bureaucratic control be permitted to destroy the freedom and initiative of our profession. We are willing to cooperate with agencies in participation of new endeavors in preventive medicine in all these fields.

o. The A. M. A. approves the principle of hospital service insurance or group hospitalization plans as long as they do not include any type of medical service. We believe it practical to develop insurance plans to cover at least in part the costs of prolonged or expensive illness, as long as they are under the control of agencies which insure their soundness and financial responsibility, and are approved by the County Medical Society. We are opposed, however, to government subsidies of, or other financial participation in, their activities.

p. On the question of compulsory health insurance, we feel that it requires for its operation a large administrative force with consequent development of a bureaucracy, and an administrative expense far beyond any possible value in the actual medical care of the people. It results in a high degree of political control of which the M. D. and patient are the goats, and so we are not willing to foster any system of this type. It is a complicated bureaucratic system, and no place in a democracy, and which sets up far-reaching tax systems and lends itself to political control and manipulation.

q. The A. M. A. recognizes that the care of the indigent is fundamentally the concern of the state, and should be adequately supported by taxation, and not dependent entirely upon the freely given and unremunerated services of the physicians. That problem is one for the local governments, and should provide hospital, clinics, doctors and medicines. We believe that local governments should provide the funds for medical care, and justly believe that the function of providing that care should reside in the medical profession, and should remain there. Such endeavors, either for the indigent or the low income group, would receive sympathetic support from the government in every legitimate way that is free from bureaucratic control.

r. We recognize that the indigent sick constitute a menace to the entire populaiton, and voice the necessity for state aid in poorer communities, or even the federal government may need to participate when the state is unable to meet the emergencies.

s. We believe that public health and medical service as a whole will suffer and deteriorate through the application of regimented and governmentally controlled methods of medical practice, and we are convinced that the public health of the nation can best be maintained through continuation and advancement of the present individualistic practice of medicine.

t. We believe that it would be well to advocate the concentration of the health activities of the federal government within the structure of one department of the government and would advocate the creation of a new cabinet member to administer health matters.

J. D. HAMER, M. D., *Delegate*
Arizona State Medical Association

EXTREME SCOLIOSIS WITH CHEST INJURY RESULTING IN HEMO-PNEUMOTHORAX

HOWELL RANDOLPH, M.D., F.A.C.P.

CASE REPORT—Z. B. J.

C. C.: Hemotptysis and pain in the chest.

F. H.: Father living and well, age 79. Mother died of congestive chills when patient was one year old. Foster mother living and well. No brothers and sisters. One child, 21 years of age, well and wife is well.

Read before Staff Meeting, Good Samaritan Hospital, Sept 23, 1938.

P. H.: No serious illnesses in childhood and only the usual measles, mumps and chickenpox.

P. I.: When patient was 13 years of age he fell out of a tree and injured his back, but did not quit work (selling papers, etc.). However, he had a "catch" in the back for several months. He began to notice that the left shoulder was lower than the right. He was fitted with a brace for the back, but wore it only a short time because it hurt him. He continued working, in store jobs and bookkeeping, etc., and the back kept growing more crooked until he was 16 years old, and it has been that way since. When he was 20 years old he was in bed months under a physician's care. Another physician saw him at that time and thought he had acute ruptured appendix, but did not operate. Gradual recovery of a fair degree of strength. He worked continuously until 1929 when he fell from a ladder and injured his back. The physician, who saw him briefly at that time, taped his chest and told him he had a collapsed lung. Patient was laid up for thirty days and he coughed up some blood several days after this accident. Only a cursory examination was made and no x-rays were taken after this accident. I do not see how a pneumothorax could have been more than guessed at. Since then he has been on construction work either painting, carpenter or supervising work. On September 8th, 1938, he was standing on the top rung of a four-foot ladder, driving top of frame into place; the ladder went out from under him and he landed on the ground flat on his back. This happened at 2:00 p .m. There was severe pain and within an hour blood came up into his throat in considerable quantity and he expectorated without coughing hard several ounces of blood that afternoon and night. He came into the hospital the next morning. He was still spitting blood and had severe pain in the right lower chest and back. There were only a few streaks of blood the next day and none since, but the pain was quite severe and he was short of breath for several days because of pain on breathing.

P. E.: A poorly nourished man, who is very much stooped over. Weight is 105¾ pounds, temperature 99, pulse 88, blood pressure 86/70. Tonsils are small. Teeth are in fair condition, but there are a number of cavities and several teeth are missing. Heart sounds are clear, but the heart is very much displaced to the right side of the chest. The sounds in the left lung show normal respiratory quality, but there is amphoric breathing over the upper right and absent breath sounds over most of the lower and middle portion of the right chest. The ribs on the right side are displaced backward and are extremely bowed, and the spine shows a very marked S shaped scoliosis with the displacement of the thoracic spine toward the right. Fluoroscopic examination showed a line of fluid with air above it occupying the right costrophrenic angle. This fluid line was present on the x-ray taken imediately upon admission to the hospital about 24 hours after the accident. An attempted aspiration was made four days later, and although what was thought to be an air pocket was encountered no fluid was withdrawn. A small amount of gentian violet was put into the pneumothorax pocket and this was not expectorated during the next 24 hours. Another attempted aspiration at about the same level but farther back resulted in the withdrawal of pure blood of a dark reddish color, completely laked and without any clots. The culture of this blood showed no growth in 48 hours.

DISCUSSION

The etiology of the scoliosis is obscure. The injury to the back when the patient was 13 years old is probably the origin, but whether this resulted in pleural infection, which was not diagnosed, or whether it was simply an injury to the spinal muscles, is rather difficult to determine. I believe the trauma at the time of this last injury probably produced spontaneous pneumothorax; but in any event, whether this condition was new or old, certainly we must assume that the hemothorax was the result of the recent injury.

Discussion by Dr. Ronald Haires as follows. Many cases of scoliosis reported, as high as 80 per cent, are of unknown etiology and it seems that the case presented very probably falls in this group. The age of the patient, 13 to 16 years at the time of its development, fits in with the average in formation of scoliosis. If empyema had been the result of the injury at the age of 13 the scoliosis would be expected to have taken place to the opposite side.

MISCELLANY

MEDICINE UNDER THE NEW DEAL

By H. L. Mencken

The project of the New Deal Kremlin to liquidate the American Medical Association under the Sherman Act appeared at first glance to be only an elephantine sort of practical joke, and in that character I discussed it lightly in the Sunpaper of August 5. But in a little while news came from Washington that the boys really proposed to go through with the show, and on August 13 a talented New Deal professor, Dr. Walton Hale Hamilton, was assigned to set me right about it and put me in my place.

I have read Dr. Hamilton's exposition in an humble spirit, but can only report that it leaves me profoundly unimpressed. It is smart but not adroit; voluptuous but not persuasive. Its substance is contained in the following paragraph:

The technology of medicine has made its great advances by trial and error; the arrangements under which patients have access to medical services must be kept subject to a like revision. It is silly to encourage experimentation in the medical laboratory and to forbid it in the realm of medical economics.

* * *

Well, what does this mean? If it means anything at all, it means that the American Medical Association is opposed to all such experimentation, and is trying by some means or other to stop it. Is there any truth in that allegation? There is no truth in it whatsoever.

The plain and simple truth is that the Journal of the association, for eight or ten years past, has given over a large part of its space to the description and discussion of new "arrangements" of medical practice, and that more than one of these "arrangements" has been passed as unobjectionable, and is being tested at this very moment by members of the association in the highest standing.

I point, as a near and obvious example, to the scheme of the Asscoiated Health Service of Baltimore. That organization, which now has nearly 25,000 members, is not only tolerated by the local bigwigs of the A. M. A., but was actually launched and underwritten by some of them. All of the Class A hospitals of Balitmore absolutely without

exception, have agreed to accept subscribers to the service as patients, and all or nearly all of them contributed to the funds needed to set it going. Two of its directors are Dr. Winford H. Smith, director of the Johns Hopkins Hospital, and Dr. Arthur J. Lomas, director of the University Hospital, and not a few of the staff doctors of both hospitals have joined it as members, and brought in their wives and children.

The reasons for this tolerance are not far to seek. They lie in the plain and single fact that the Health Service does not undertake to practice medicine, but simply provides its members with hospital care and accommodation. Every one of them is free to choose his own doctor, and any doctor may be chosen who has the privilege of taking patients to any Baltimore hosptial. There is no intervention between doctor and patient. There is no shading or conditioning of the doctor's professional dignity and independence.

The "arrangements" to which the American Medical Association objcets, and quite properly objects, are entirely different. They not only offer hospital accommodation, but also medical service. They employ doctors, organize them into staffs, put them under superiors (some medical, but others lay), and hire them out to subscribers. Whatever the subscribers pay for their services goes, not to the doctors, but to the organization. It pays them whatever they are willing to work for, and keeps the rest.

Obviously, no doctor who works under such conditions can be said to maintain a strictly professional status. He may have a good job; he may like it, and he may give competent and conscientious service to the patients assigned to him, but in the last analysis they are the association's patients, not his. It may take them away from him at will, and assign him others. It may take them all away from him by dismissing him. They exist as his patients only by the association's grace, and only by conditions that it lays down.

Certainly the lawyers in the Department of Justice must be well aware that an analagous effort to invade and deprofessionalize their own profession has been under way for years and that nearly all the decent lawyers in America have opposed it violently and gone into court time and again to prevent it. All the objections that these decent lawyers have brought against the practice of law by corporations are valid against the practice of medicine by corporations. Both schemes, however artfully they may be disguised, involve the organization of professional men into gangs bossed by laymen and the retailing of their services to all comers. Both are completely destructive of their professional status.

* * *

The present disingenuous assault upon the American Medical Association did not originate in the Department of Justice. It originated in quite other quarters, and has been going on for a long while. There are doctors who aspire to office in the association, with all the honors and dignities thereto appertaining, but do not seem to be able to get the necessary votes; they appear to believe that their chances would be better under some sort of medical new deal. And there are quacks who have felt the association's heavy hand; they are against it on all counts and to the death.

Both these parties have been on the warpath for years. Of late they have been joined by a miscellaneous rabble of pinks, some of them outright converts to the Moscow hooey and others members of the "I'm Not a Communist—But" Association. The aim of these brethren is to nationalize the profession of medicine in the United States as it has been nationalized in Russia. Some of them say so frankly, and undertake to prove idiotically that the Russian system is better than the American. The rest, less honest, root for it without openly advocating it.

All the pink weeklies and other manic-depressive sheets are hot against the A. M. A. and belabor it constantly. They denounce it under the name of the medical trust, and allege that its members are racketeers who rob their patients and oppress the poor. The justice and decency of these charges may be indicated by putting them into concrete terms. What they allege, in plain English, is that such men as Dr. Thomas S. Cullen, Dr. Dean Lewis and Dr. John T. Finney are racketeers, and that scores of able and faithful men and women who labor in the John Hopkins and University of Maryland dispensaries every day are oppressors of labor.

* * *

The Chief Butt of all such scurvy liars is Dr. Morris Fishbein, editor of the Journal of the American Medical Association. In the fulminations of the pink weeklies he is commonly promoted to the presidency of the association and depicted as its Stalin, Hitler and Mussolini. I happen to be well acquainted with Dr. Fishbein, and may be presumed to have some qualification for judging him as an editor. It is my belief that no abler, more honest, more intelligent or more courageous editor is in practice in the United States. Week after week, year after year, he produces an unfailingly competent and valuable paper.

In all the history of American medicine, no other medical editor save his predecessor and mentor, Dr. George H. Simmons, has labored more valiantly and effectively to raise and safeguard the standards of the profession. He has been in the forefront of every effort, by whomsoever initiated, to put down buncombe and quackery and to promote sound medicine. Every improvement that has been made in his time, whether in professional education, in hospital service, in research and experiment, or in the bettering of relations between doctors and the public, has had his energetic support.

The quacks of all schools are naturally against him. The osteopaths and the chiropractors, the patent medicine harpies and the Christian Scientists have been banging away at him for years. Now they have got the support of the New Deal. It is a logical and legitimate alliance.

—Reprinted with permission Baltimore SUN.

WRITE THE PRESCRIPTION

A slap at oral prescriptions is given by *The American Druggist* in "An Open Letter to the Physicians of America." It runs, in part:

"Do you know that you and your associates in the medical profession are losing millions of dollars every year? And do you know that by losing this money you are jeopardizing the health of the American public.

"Of course, you don't, or you wouldn't be doing it.

"Then how, you ask, am I losing so much money and how am I endangering my patients

"Ask yourself! Do you issue oral instructions instead of *writing* prescriptions There is the answer!

"Oral prescriptions are always unwise, sometimes dangerous. They not only instruct the patient how to treat disease but they also tempt him to take a fling at the art of diagnosing his own and his friend's ailments. No one knows better than the doctor what disasters are bound to follow in the wake of amateur diagnoses and bungling shot-in-the-dark therapy. 'Even if a physician is called in later the patient's chances have been impaired because of the loss of precious time.

"Oral prescriptions are unwise for another reason. They curtail the doctor's legitimate income

and make it difficult for him to earn the livelihood that he and his family are dependent upon.

"*Write* your prescription, doctor—even when you prescribe a well-known trademarked compound. Written prescriptions insure accuracy, tend to prevent the dangers of amateur diagnosis, and are economically just and wise."

—*N. Y. St. J. Med.*

PATHOLOGIC EFFECTS OF ELIXIR OF SULFANILAMIDE (Diethylene Glycol) POISONING

In a report by E. M. K. Geiling and Paul R. Cannon, published under the auspices of the American Medical Association Chemical Laboratory, the similarity between the clinical course and pathologic picture of the fatal human cases and that observed by these investigators in experimental animals affords conclusive proof that the chief toxic agent in Elixir of Sulfanilamide was the diethylene glycol. They showed this substance to have a cumulative effect. Experiments are now in progress to determine the manner of excretion and the levels at which different species of animals can handle diethylene glycol. The fact that increasing numbers of new chemicals are being introduced into therapeutics serves to direct attention anew to the necessity of adequate toxicologic studies on such compounds which are to be used in medical practice.

In the examination of a drug with a view to its use in therapeutics, the following conditions are essential: 1. If at all possible, the exact composition (qualitative andquantitative) should be known; or if not obtainable, the detailed method of preparation of the product. 2. Acute toxicity studies on a sufficient number of laboratory animals of different species must be performed in order that any possible cumulative effect of the drug may be noted. 4. Careful and frequent observations of the animals are necessary, so that a composite picture of the clinical course is available. 5. Careful pathologic examination of the tissues with appropriate stains is necessary. 6. Effects of the drug on animals with experimental lesions of various important excretory or detoxifying organs, especially of the kidneys and liver, should be studied. 7. The rate of absorption and elimination of the drug, its path and manner of excretion, and the concentration levels in the blood and tissues at varying times after administration must be determined. 8. The possible influence of the presence of certain foodstuffs or drugs should be noted. For example, magnesium sulfate should not be administered to a patient undergoing treatment with sulfanilamide. 9. Careful examinations for idiosyncrasies or untoward reactions should be made. Many human lives have been sacrificed by the failure to meet the standards of these preliminary tests and many more lives will be sacrificed if such standards are not put into effect. The life and safety of the individual should not be subordinated to the competitive system of drug exploitation. The Elixir of Sulfanilamide catastrophe should once again serve as a warning to physicians who so readily prescribe unofficial drugs.

—*J. A. M. A.*

ABORTION AND LEUNBACH'S PASTE

Physicians of this country are now receiving pamphlets from the Merz and Company Chemical Works, Inc., Newark, N. J., encouraging them to perform therapeutic abortions by injection into the uterus of Leunbach's Paste. The injection of paste into the uterus for the production of abortion is not a new procedure but it has never been accepted as safe or scientific. The method cannot do much more than to initiate contractions in the uterus, leaving the final cleansing to be done by other means. Engelmann cites five deaths from air embolism and twelve deaths from fat embolism after the use of pastes. Brack reported that, at necropsy in two cases of embolism after the injection of pastes, an infiltration of salve occurred throughout the uterine wall. Schach cited one death from fat embolism and records twenty-five similar fatalities in the literature. Leunbach himself said that it is necessary that pastes be free from air and that the cervical canal be free from pathogenic bacteria before pastes are used. And yet Merz and Company, which claims its product contains neither air nor fat, would implant the idea of safety into the minds of recipients of their pamphlets. These "guarantees" mean, they say, "that with reasonable care neither an air nor a fat embolism will follow the injection of Leunbach's paste." But who will define reasonable care! Will those physicians, and possibly those midwives and others, who make a business of illegal abortions take reasonable care and thus avoid a fatal air or fat embolism?—*(J. A. M. A.)*

COMMUNICATIONS

Sir:

We would appreciate your including an announcement in your publication of the Third Congress of the Pan-Pacific Surgical Association to be held in Honolulu, September 15 to 28, 1939.

This will be the third meeting of the Pan-Pacific Surgical Association, the two former ones having been held in 1929 and 1936, also in Honolulu. An invitation is extended to all surgeons of your Association to meet in Honolulu outstanding men from countries of the Pacific area, including Australia, New Zealand, China, Japan, Java, Canada, United States, for an interchange of surgical thought and for the purpose of bringing about better understanding through personal contact among the surgeons of these countries.

There will be sections in fractures and orthopedics, general surgery, gynecology, motion pictures, neuro-surgery, ophthalmology, otolaryngology, roentgenology, plastic surgery, thoracic surgery and neurology, all headed up by outstanding men as chairmen for the United States and equally prominent men as chairmen for the Australasian section. The Congress affords not only participation in interesting scientific papers, but a most enjoyable vacation in the "Paradise of the Pacific."

Communications for information should be directed to George W. Swift, M. D., 902 Boren Avenue, Seattle, past President of the Association; Frederick L. Reichert, M. D., Stanford University Hospital, San Francisco, program chairman for the United States; Howard Updegraff, M. D., 6777 Hollywood Blvd., Los Angeles, program vice-chairman; or Forrest J. Pinkerton, M. D., secretary-treasurer of the Association, Young Building, Honolulu, Hawaii.

Very truly yours,

F. J. PINKERTON, M. D.,
Secretary-Treasurer.

NEWS

General

Advance announcement has been made regarding the 11th Annual Spring Conference of the Dallas Southern Clinical Society. The meeting is to be held in Dallas, at the Adolphus Hotel, March 13, 14, 15, 16, 1939. Twelve of the nation's leading medical teachers are to speak. Full information may be obtained by addressing the secretary, Dr. Geo. A. Schenewerk, 1133 Medical Arts Bldg., Dallas.

The War Department announces an examination December 5-9, both dates inclusive, for qualification of candidates for appointment as first lieutenants in the U. S. Army Medical Corps to fill vacancies during the fiscal year 1939. The examination is open to all male graduates of acceptable medical schools who have completed one year's internship in an approved hospital and who will not be over 32 years of age at the time it will be possible to tender a commission. Boards of medical officers will convene throughout the United States to conduct the examination, which will consist of a physical examination, a written examination in professional subjects and a determination of the candidates' adaptability for military service. Licentiates of the National Board of Medical Examiners may be exempted from the written professional examination. Full information and application blanks will be furnished on request to the Adjutant General, War Department, Washington. D. C. Applications must be filed by November 19.

The surgeon of the Eighth Corps. Area, U. S. Army, announces that physicians are needed for duty in the Civilian Conservation Corps. Applicants must be graduates of class A medical schools and preference will be given to medical reserve officers of the grades of first lieutenant or captain.

Assignment preference of applicants will be granted when practicable within the five states comprising the eighth corps area: Arizona, Colorado, New Mexico, Oklahoma, Texas and Wyoming. Inquiries should be addressed to the Surgeon, Headquarters, Eighth Corps Area, Fort Sam Houston Texas.

The American Physicians Art Association is planning an exhibition of works of art produced by physicians throughout the country at the time of the American Medical Association Session in St. Louis May 15 to 19, 1939. The exhibit will embrace paintings, sculpture, etchings, carvings, works in metal and photography. It will be housed in the City Art Museum in Forest Park, St. Louis. It is hoped that physicians of the state of Missouri who work in the arts will exhibit and the St. Louis committee, which has charge of arrangements, will be glad to know of any who are inclined artistically. Any physician who works in any of these media and who would care to exhibit is asked to communicate with Dr. Frederick O. Schwartz, 508 North Grand Boulevard, St. Louis.

El Paso County

At the September 26 meeting of El Paso County Medical Society at Hilton Hotel, Drs. Felix Miller and M. P. Spearman reported during the dinner hour on the actions of the recent special session of the House of Delegates of the A. M. A. The following formal program was given:

1. Angina, Atherosclerosis and Allergy.....Dr. G. Werley
2. Cardiac Neurosis.....Dr. Ralph H. Homan

El Paso County Medical Society was entertained by the staff of Wm. Beaumont General Hospital on Monday, October 10. The program follows:

7:00 p. m. Supper: Patients' Mess Hall
8:00 p. m. Program

Medical Service:
Colonel Thomas E. Scott, M. C.
Chief of Service

1. Right sided arteritis with bilateral optic atrophy .....Lt. Col. F. E. Weatherby
2. Sulphanilimide in Malta Fever.....Capt. H. B. Luscombe
3. Chronic Myelogenous Leukemia associated with coronary occlusion....Capt. H. J. Bell

Surgical Service:
Lt. Col. Raymond W. Bliss, M. C.,
Chief of Service

1. X-ray as a major aid in the diagnosis of common acute surgical conditions: Presentation of typical films in conjunction with case reports.....Lt. Col. R. W. Bliss and Maj. W. L. Thompson

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BOOK NOTES

ESSENTIALS OF OBSTETRICAL AND GYNECOLOGICAL PATHOLOGY WITH CLINICAL CORRELATION. By Marion Douglass, M.D., F.A.C.S., Associate Professor of Gynecology, Western Reserve University, and Robert L. Faulkner, M.D., Senior Clinical Instructor in Gynecology, Western Reserve University With 148 illustrations. The C. V. Mosby Company, St. Louis, 1938.

The authors in this publication of 177 pages and 148 illustrations have prepared a hand book of gynecological and obstetrical pathology that serves many purposes. And although it is written chiefly for undergraduate students and housemen it is definitely of value for specialists highly essential that in the field of gynecology there must be definite correlation between the pathological picture and the clinical aspects of the case.

The treatment of this subject has been divided according to an anatomical classification starting with the external genitalia and working through in seven chapters to the ovary. An eighth and last chapter deals with pregnancy and covers such special subjects as Placenta accerta, Eclampsia, etc.

All chapters are profusely illustrated by excellent photographic and photo-micrographic studies. Additionally to these suitable drawings and diagrams are included to completely cover the entire subject.

An interesting editorial touch is the listing of all illustrations numbers under the sub-heading throughout the entire book. The index is listed with anatomically and by symptoms.

The inclusion of short notes on treatment tends to more definite correlate the pathological with the clinical side of each subject and makes the book very much more interesting reading.

ESSENTIALS OF OBSTETRICAL AND GYNECOLOGICAL PATHOLOGY WITH CLINICAL CORRELATION can be recommended by this reader to all students of medicine. —*G. H. J.*

OUTLINE OF ROENTGEN DIAGNOSISS, Leo G. Rigler, M. D., Professor of Radiology, University of Minnesota. J. B. Lippincott Company, Philadelphia, 1938.

This work is something new in the field of diagnostic roentgenology, comprising a very well chosen outline of more commonly met conditions, with special reference to the value of the roentgen examination in these. There are many outlines of differential diagnosis included and these are most helpful. More than 200 illustrations and composite drawings make the film findings more clearly demonstrable. These are arranged in atlas form in the back portion of the book and are unusually good illustrations, showing a wide variety of pathological conditions. The book is not in any sense a reference work, but is one that will prove helpful to student and practitioner alike. It is very practical. Its bibliography is satisfactory but not complete. —*D. von B.*

THE STORY OF LUCKY STRIKE. By Roy C. Flannagan, Author and Staff Commentator of the Richmond News Leader. Richmond, Va.

The "Lucky Strike" story relates the discovery of tobacco by the English-gentlemen settlers of America in 1607. John Rolf, who married Pocahontas, and who probably was educated by her in the culture of tobacco, sent the first shipment of Virginia leaf to England in 1613. The naming of the plant, its growth, its curing, its sale, the crying of the auctioneer, the making of "Lucky Strike" cigarettes with "toasting" of the tobacco, together with some of the romance of the tobacco growers' every day lives is told in an entertaining style. The research work and the meticulous handling of the tobacco which goes into "Lucky Strike" cigarettes is told in a manner to impress the reader that these are about the only cigarettes worth smoking. —*O. H. B.*

TWENTY-EIGHT YEARS OF STERILIZATION IN CALIFORNIA. By Paul Popenoe, Sc. D., and E. S. Gosney, B.S., LL.B., President of the Human Betterment Foundation. A publication of the Human Betterment Foundation, Pasadena, California, 1938; $.25.

This pamphlet of 47 pages is a report of the results of sterilization of about 10,000 mentally-below-par persons in California. For thirty years California has been systemically enforcing a eugenic sterilization law. In the main the sterilizations have been done upon inmates of state institutions. The striking result reported is that a number of the individuals has been paroled to lead useful lives—due not to the sterilization but to the beneficial influence of the training received in the institutions. Whereas many of them had been sexually delinquent before the institutional experience their lives afterward, notwithstanding the sterilization and its lack of influence on sexual desire and gratification, were for a surprisingly large part entirely commendatory. Physicians generally and all persons interested in the betterment of the human race should read this pamphlet. —*O. H. B.*

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RECENT ABSTRACTS

ETIOLOGY OF NAUSEA AND VOMITING OF PREGNANCY: PRELIMINARY REPORT

J. William Finch, Hobart, Okla. *(Journal A.M.A.)* states that nausea and vomiting of pregnancy develop at the same time at which the corpus luteum of pregnancy reaches an appreciable size. The symptoms disappear at about the time the gland is known to begin retrogressive changes. In a series of patients with nausea and vomiting of pregnancy in varying degrees when injected intradermally with from 0.02 to 0.03 c.c. of progestin in oil a cutaneous reaction developed directly proportional to the severity of the symptoms. A control series of patients who were not nauseated and in the pregnant state gave negative cutaneous reactions when tested in the same manner. Patients treated with subcutaneous corpus luteum extract and progestin along the lines of allergic desensitization were gradually relieved of their symptoms. A high percentage of the patients with nausea and vomiting of pregnancy either had other diseases of allergy or gave a family history of allergy. Intradermal testing may determine, even before pregnancy, whether a patient will or will not be nauseated when pregnant by determining whether or not she is sensitive to progestin.

SENSITIVITY TO RABBIT SERUM

AARON BROWN and PHILIP H. SECHZER, New York *(Journal A. M. A.)*, performed intradermal and conjunctival tests with rabbit serum on 101 allergic patients. One person gave a systemic reaction to the conjunctival test, and the increasing use of rabbit serum prompts the authors to urge caution in the administration of this agent. The conjunctival reaction, they feel, is a good indicator of general sensitivity, and while fewer persons may be sensitive to rabbit serum than are sensitive to horse serum, the same care should be used with rabbit as with horse serum. The tests with rabbit serum gave sixty-nine negative intradermal reactions, twenty-two flare reactions, six 2 plus reactions, two 3 plus reactions and two 4 plus reactions. One person gave an immediate positive intradermal and conjunctival reaction, followed within five minutes by a systemic reaction, with urticaria, angioneurotic edema and asthema, requiring repeated injections of epinephrine for relief. These symptoms persisted in a mild way for several days, requiring the continued use of ephedrine, augmented by occasional administration of epinephrine.

BERT E. HEMPSTEAD, Rochester, Minn. *(Journal A. M. A.)* points out that osteomas that arise in the paranasal sinuses are not common. Occasionally they are discovered in routine roentgenologic examination of the sinuses. They are not diagnosed clinically or even suspected of being present until either evidence of intracranial complications becomes manifest or external deformities appear. Most osteomas can be removed through the fronto-ethmoidal incision. If osteomas do not involve the dura or cribriform plate, removing them by the method of Cushing is illogical. Pyocele or mucocele of the sinuses can be handled best through the fronto-ethmoidal incision. Osteomas associated with intracranial complications are cared for best through the transfrontal approach. If osteomas are associated with intracranial complications and with definite infection of the sinuses, operation might be done in two stages with advantage.

The facts and comments presented by OTTO A. BESSEY, Boston *(Journal A. M. A.)*, in this review on the methods of assaying vitamin C serve to give a general idea of the present state of the subject. Chemical methods have rapidly replaced vitamin C determinations by bio-assay for many types of investigations. However, the more specific animal tests continue to be necessary in order to avoid the risk of misinterpretation of the chemical tests. Guinea pigs kept on certain purified diets fail to gain weight, and the specific pathologic changes of scurvy develop. The degree of protection or cure of the deficiency bears a quantitative relation to the amount of the vitamin administered. This principle forms the basis for biologic methods of vitamin C analyses. The dietary sources of vitamin C are discussed, a table of various foods with their vitamin C content is presented and the effect on the retention, diminution or loss of vitamin C by the different methods of preparing and preserving food is also discussed.

SCRAPS

LOOK, YOUSE GUYS!

Some choice bits clipped from a cult sheet. Why doesn't someone tell us these marvels before we spend half a lifetime studying?

Q.—My mother was cured by a system known as "Etheronics." The doctor told her by the etheronic machine just what ailed her before he began treating her. Don't you think this is just mind reading, or clairvoyance?

A.—No indeed. Etheronic machines have been covered by U. S. Patents, and the instruments are constructed of aetherite—a composition sensitive to waves of ether. It is becoming a fast recognized fact that man's body is a radio—not only broadcasting, but also a receiving station. Aetherite detects the emanations from man's body. I understand that there are many medical men specializing in the use of etheronic machines for more accurate diagnosis and treatment. The average surgeon who finds his money in the knife, of course has not yet accepted this wonderful medical advance.

Q.—I have been a rheumatic sufferer for five years and the doctors have given me so many salicylates that I am dopey at the office, and now I am going to lose my job. Can you give me any help? I can't pay you anything.

A.—In the first place follow the diet we are sending you, which hasn't a grain of white flour in it.

(Continued on page 460)

Under Suspicion!

Cancer is often present in lesions that seem benign. Every lesion about which there is any question is under suspicion until malignancy is definitely disproved.

Biopsy and competent pathological examination are the only methods of early diagnosis of cancer.

Early diagnosis, plus intensive and rational therapy still offer the cancer patient his greatest, and often his only chance of cure.

Specimen containers in mailing tubes sent anywhere cheerfully upon request. Results by wire (at our expense) to avoid delay.

Turner's Clinical & X-Ray Laboratories

FIRST NATIONAL BANK BUILDING

EL PASO, TEXAS

GEORGE TURNER, M. D. DELPHIN von BRIESEN, M. D.

PACIFIC MUTUAL NEWS

By FRANK B. SCHWENTKER

One of our underwriters called on Mr..... and learned that he had just completed the building of a new home, on which he had arranged a mortgage loan of $6,000 (FHA). This mortgage included provision for fire insurance, taxes and other contingencies but of course, no provision for life insurance.

After analyzing the problem, our Life Underwriter offered this solution; A $3,000 Pacific Mutual Policy with Mortgage Insurance Agreement (20 year period). This arrangement provides protection as follows:

If death occurs at the end of the first year, net return on face of policy	$3,000.00
Net return on mortgage insurance agreement	$4,026.00
Gross return	$7,026.00
Balance due on mortgage	$5,820.78
Surplus to family	$1,205.22

If death occurred at the end of the tenth year:

Net return on policy	$3,000.00
Net return on Mortgage insurance agreement	$2,454.00
Gross return	$5,454.00
Balance due on Mortgage	$3,732.28
Surplus to family	$1,721.22

Deposit—$95.19 annually for 15 years; $64.26 annually thereafter (based on age 35).

Phone our office and we will be glad to send an underwriter to explain our special mortgage policy.

THE F. B. SCHWENTKER AGENCY,
711 Title & Trust Bldg.,
Phoenix, Arizona.

THE SCHWENTKER-BRUCE AGENCY,
915 Mills Building,
El Paso, Texas.

SCRAPS

(Continued from page 458)

Second, see your dentist. For immediate help, get up a good improvement in your circulation by visiting a chiropractor, where you'll receive more help in dietetic ways of living than from the M. D. Chiropractors have been known to extend credit to very sick patients because they know so well that the patient will get results and will return and pay them.

Q.—Doctor, please help me. I live in Michigan, and my boy died by having his tonsils removed at the suggestion of an ignorant school teacher. He didn't bleed heavily, and no one seems to know why he died. Now, my other boy has been told by a nurse at school that his tonsils should be removed.

A.—Death after tonsil removal has been known to take place, not necessarily due to crude surgery, but to what is known as a persistent thymus in the child. The doctor may have acted in good faith. However, in your own state of Michigan there is a protest on wholesale tonsil removal. Dr. ———— declares "The indications for operating have been generally widened, with the result that a wholesale tonsil slaughter has taken place. Several nurses and charitable organizations have taken up the charge, and herded children into hospitals for operations, merely because the tonsils were thought to be 'enlarged.' Many general practitioners have seen in the operation an easy way to round out an income, and have continued the onslaught."

May I suggest with your second son that you follow a diet without white bread or white sugar for a month, and watch the wholesome effect on his tonsils. The tonsil is only a filter, and its swelling indicates wrong diet in its effort to overcome the toxins from denatured foods.

THE SCHOOL-CHILD'S BREAKFAST

Many a child is scolded for dullness when he should be treated for undernourishment. In hundreds of homes a "continental" breakfast of a roll and coffee is the rule. If, day after day, a child breaks the night's fast of twelve hours on this scant fare, small wonder that he is listless, nervous, or stupid at school. A happy solution to the problem is Pablum, Mead's Cereal cooked and dried. Six times richer than fluid milk in calcium, ten times higher than spinach in iron, and abundant in vitamins B and G, Pablum furnishes protective factors especially needed by the school-child. The ease with which Pablum can be prepared enlists the mother's co-operation in serving a nutritious breakfast. This palatable cereal requires no further cooking and can be prepared simply by adding milk or water of any desired temperature. Its nutritional value is attested in studies by Grimm et al who found that tuberculous children receiving supplements of Pablum showed greater weight-gain, greater increase in hemoglobin, and higher serum-calcium values than a control group fed farina.